Mitigated Negative Declaration

ARROW HIGHWAY BUSINESS PARK

16203-16223 Arrow Highway, Irwindale, California

TENTATIVE PARCEL MAP NO. 72864

Tentative Tract Map No. 01-2014
Site Plan Design Review No. 01-2014

Prepared for:

City of Irwindale

Community Development Department

5050 North Irwindale
Irwindale, California 91706

Prepared by:

Environmental Impact Sciences

26051 Via Concha
Mission Viejo, California 92691-5614

August 2014

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Mitigated Negative Declaration

Arrow Highway Business Park

16203-16223 Arrow Highway
Irwindale, California

Tentative Tract Map No. 01-2014
Site Plan Design Review No. 01-2014

Applicant:
Panattoni Development Company, Inc.
20411 SW Birch Street, Suite 200
Newport Beach, California 92660

Prepared for:
City of Irwindale
Community Development Department
5050 North Irwindale
Irwindale, California 91706

Prepared by:
Environmental Impact Sciences
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Mission Viejo, California 92691-5614

August 2014

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Environmental Checklist Form (Initial Study)

City of Irwindale, Community Development Department

Project title: ***Arrow Highway Business Park***
Tentative Tract Map No. 01-2014 (Tentative Parcel Map No. 72864)
Site Plan Design Review No. 01-2014

Public property conveyance (Housing Authority of the City of Irwindale)

The following additional actions are deemed to be ministerial and are not subject to CEQA: (1) grading permit; (2) building and safety permits; (3) certificates of occupancy; (4) water and sewer connection permits; and (5) industrial wastewater discharge permit.

CEQA Lead Agency: *City of Irwindale*
Community Development Department
5050 North Irwindale, Irwindale, California 91706

Responsible Agency: *Los Angeles County Flood Control District*
Storm drain connection and encroachment permit (construction permit)

Contact person: *City of Irwindale*
Community Development Department
Paula Kelly (626/430-2209)

Project sponsor: *Panattoni Development Company, Inc. (Applicant)*
20411 SW Birch Street, Suite 200
Newport Beach, California 92660

Project location: *16203-16223 Arrow Highway, Irwindale, California*
(16203, 16223, and 16233 Arrow Highway)

Assessor's parcels: *APNs 8618-010-907, 8619-012-905, and 8619-012-909 (Figure 1)*

USGS quadrangle: *USGS 7.5-Minute Baldwin Park*

Gross acreage: *6.25± acres (272,218± square feet)*

General Plan: *City of Irwindale General Plan*
Industrial/Business Park

Zoning designation: *16233 Arrow Highway - Light Manufacturing (M-1)*
16203-16223 Arrow Highway - Heavy Manufacturing (M-2)

Description of project: *The subject property (16203-16233 Arrow Highway) is located on the north side of Arrow Highway in the City of Irwindale (City), approximately 100 feet west of Morada Street. As depicted in Figure 2 (Conceptual Site Plan – 4-Building Plan), the proposed project includes the approval, construction, and operation of a 138,410 square foot (SF) non-residential land use. The project would consist of four Type III-N industrial buildings collectively comprising a 132,410 SF building footprint, plus an additional 6,000 SF of mezzanine area. As proposed, the project's floor-area-ratio is 50.8 percent and the building's lot coverage is represented as 48.6 percent. A total of 28,250 SF of landscaping (10.4 percent of total lot area) is proposed.*

The proposed project is identified as a "speculative industrial buildings." Although the precise land use and site plan configuration may vary, for the purpose of the California Environmental Quality Act (CEQA) compliance, it is presently assumed that the proposed project includes manufacturing, warehouse, distribution, showroom, and office-related uses. It is likely the office use will be ancillary to the site's primary manufacturing, warehouse, and/or distribution operations.

In recognition of market-based variables, the Applicant seeks flexibility with regards to the project's entitlements, such that the proposed building square footage could be contained within either a single building or distributed among multiple buildings to be constructed at the project site. As depicted in Figure 3 (Alternative Site Plan No. 1 – Single-Building Plan) and Figure 4 (Alternative Site Plan No. 2 – 5-Building Plan), respectively, two alternative site plans have been submitted by the Applicant, each representing a variation of the Applicant's development concept and reconfiguration of on-site improvements. Presented are separate alternatives for a single-building option (133,000 SF) and a five-building option (132,900 SF). If constructed as multiple buildings, individual buildings might range in size between under 25,000 to around 42,000 SF. The Applicant has indicated that a final site plan cannot be determined pending the outcome of further discussions between the Applicant and the site's end user(s). As a result, the Applicant has requested that the conceptual site plan and there alternative site plans be concurrently considered.

Because design revisions are common during the entitlement process, under the provisions of the California Environmental Quality Act (CEQA), an agency can obtain environmental clearance for a "larger" project and subsequent permit a "lesser" project as long as the permitted project creates incrementally fewer impacts (i.e., entitling the "biggest box" provides concurrent environmental clearance to all "smaller boxes"). The project analyzed herein constitutes a composite or "hybrid" of those plans, assuming the square footage of one, the trip generation characteristics of another, and the nearest proximity of on-site noise generators to sensitive off-site receptors of a third. If the environmental effects of that consolidated project can be effectively mitigated, under CEQA, the Applicant will have flexibility to further modify the site plan within the broader limitations of those design perimeters.

In order to accommodate the widest range of manufacturing, warehouse, and office-related uses, the trip generation rates projected to create the greatest number of daily and peak-hour trips were calculated. In the absence of a specific non-residential land use, the precise square footages to be constructed with regards to each of those uses, and the final configuration of buildings, the proposed project is defined in terms of maximum allowable gross leasable square footage (133,000 SF), absent the mezzanine, and corresponding daily and peak-hour "trip budget," represented as "passenger-car-equivalents" (PCEs) and "non-PCEs." As a result, without predicating the need for additional environmental review beyond that presented herein this environmental analysis seeks to provide both the City and the Applicant sufficient environmental clearance for a multiplicity of possible development scenarios, subject to the "trip budget" presented in Figure 5 (Project Description – Composite Traffic Assumptions).

A raised median now exists along the subject property's Arrow Highway frontage. As a result, ingress and egress to the project site is restricted to right-in and right-out only.

In the absence of a specified end user(s), the City recognizes the Applicant's need to be responsive to uncertain market demands and to the specific requirements of those undetermined users. For the purpose of environmental review, sufficient information is known or can be ascertained about both the project and the project site to adequately complete requisite documentation under the provisions of CEQA. Except where otherwise noted, nothing herein is intended to limit the Applicant's ability to reasonably modify the conceptual site plan and the corresponding land use to be created by the proposed subdivision, subject to the limitations of the specified total square footage delineated above and trip budget described herein.

As required under Section 16.12.180 (Required Improvements) in Title 16 (Subdivisions) of the "City of Irwindale Municipal Code" (Municipal Code), the minimum improvements that the Applicant will be required to make (or will be conditioned to make) in the subdivision prior to the acceptance and approval of the final map by the City Council shall include, but may not be limited to: (1) adequate distribution lines for domestic water supply to each lot; (2) sewage collecting system and necessary main lines; (3) adequate drainage of the subdivision streets, highways, ways and alleys; (4) adequate grading and surfacing of streets, highways, ways and alleys; (5) curbs and gutters, cross gutters, and sidewalks; (6) monuments; (7) fire hydrants at locations designated by the City Engineer; (8) any necessary barricades and safety devices; (9) street trees; and (10) ornamental street lighting in accordance with plans and specifications approved by the City Engineer. All such improvements shall conform to the standards and specifications established by resolution of the City Council or, in the absence thereof, by the City Engineer.

As specified in Section 17.70.020 (Purposes of Provisions) of the Municipal Code: "The purpose of site plan and design review is to ensure that proposed development in the city is in conformity with the intent and provisions of this title and to guide city departments in the issuance of permits. In addition, it is the purpose of this chapter to ensure that proposed development is compatible with surrounding development in terms of scale, style and construction materials; that on and off-site circulation is adequate to support the project; that city services are adequate and available; that projects are of the highest quality of land planning and design, and that projects reflect the design themes of the community and are consistent with the city's general plan and land use and planning, all in an effort to protect the health, safety and welfare of the community and to enhance the development, use, occupancy, health, safety and welfare of surrounding areas for residential, commercial or industrial uses or purposes. Further, adherence to the standards herein will benefit the occupancy of existing property, enhance the stability and value of both improved and unimproved real property, and encourage appropriate development." To the extent feasible, as determined through site plan review, the project will conform to the "City of Irwindale Commercial and Industrial Design Guidelines," as approved by the City Council on January 14, 2009.

Pursuant to the provisions of the Los Angeles County Wastewater Ordinance, as included in the "Los Angeles County Code of Ordinances" (County Code), the County Sanitation Districts of Los Angeles County may have ministerial permitting authority over certain aspects of the proposed project (e.g., permit for wastewater discharge).

The project is scheduled for completion in 2016. Once operational, the proposed project is assumed to operate on a 24-hour per day, seven day per week basis.

Property disposition: *The project site is presently owned by the Housing Authority of the City or Irwindale (Housing Authority). The Housing Authority Law (Health & Safety Code Section 34200 et seq., Health and Safety Code [H&SC]) includes certain provisions regarding the disposition of housing authority-owned property. In general, a housing authority may "sell, lease, exchange, transfer, assign, pledge, or dispose of any real or personal property or interest in it" (Section 34315[e], H&SC).*

Section 34315.7 of the H&SC provides that real property owned by a housing authority that is not required for its foreseeable needs shall be disposed of for specific purposes, in the following order of priority: (a) Conveyance to housing or non-profit corporations for the development of for-sale affordable housing, in accordance with the optional surplus property rules that apply to cities and counties; (b) Conveyance to public, non-profit or private developers for development of rental affordable housing; transfers for this purpose may not be made at a cost below the housing authority's acquisition costs but may be transferred at a cost below market value if not less than 30 percent of the housing units will be restricted for low- and moderate-income households, with at least 50 percent of the restricted units reserved for low-income households; (c) Conveyance to private developers at market value for development for housing; (d) For any other purpose, where the sale is made to the highest bidder through a public auction.

Section 34312.3(b) of the H&SC provides that, as long as the proceeds of any sale, lease, or other disposition of real property (net of the cost of sale) are to be used directly to assist a housing project pursuant to Section 34312.3 of the H&SC for persons of low income, the housing authority may (after a public hearing) sell, lease, or otherwise dispose of real property without complying with any provision of law concerning disposition of surplus property, including, but not limited to, Sections 34315.5 and 34315.7.

Surrounding land uses: *See Figure 6 (Aerial Photograph)*

North: *Heavy Manufacturing (M-2) (City of Irwindale)*
South: *Arrow Highway (City of Irwindale)*
Heavy Manufacturing (M-2) (City of Irwindale)
East: *Single-Family Residential (R-1) (City of Irwindale)*
Our Lady of Guadalupe Mission Church (City of Irwindale)
West: *Heavy Manufacturing (M-2) (City of Irwindale)*

Baseline conditions: *The site consists of three vacated parcels and contains the following remnant improvements: (1) a former dwelling that has recently burned (16203 Arrow Highway); (2) a structure is present at the north end. The structure is divided into six units and has been heavily vandalized (16223 Arrow Highway); and (3) a structure on the west side that has an office space and three bay areas. A paint booth, storage shed, a concrete area with an awning are on the center and eastern portion and a vacant area of land is located on the northern portion of this parcel (16233 Arrow Highway).*

As proposed, the project involves the demolition and removal of existing improvements and the construction and operation of a new business park containing manufacturing, warehouse, and office uses. With regards to short-term (construction) impacts, the environmental impacts associated with the proposed project are those attributable to demolition and construction activities. With regards to long-term (operational) impacts, except where otherwise noted, this CEQA analysis has not sought to quantify the environmental effects associated with the site's historic use and its prior operation.

The environmental impacts presented herein and the City's preliminary determination with regards to those effects likely overstates the proposed project's actual impacts and represents a more conservative assessment of the project's potential environmental consequences than would otherwise be anticipated if the proposed project were to be analyzed from a "net physical change" (Section 21065, CEQA; Section 15060[c], State CEQA Guidelines) perspective.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Greenhouse Gas Emissions	☐ Population/Housing
☐ Agriculture/Forest	☒ Hazards/Hazardous Materials	☒ Public Services
☒ Air Quality	☐ Hydrology/Water Quality	☐ Recreation
☐ Biological Resources	☐ Land Use/Planning	☒ Transportation/Traffic
☐ Cultural Resources	☐ Mineral Resources	☒ Utilities/Services
☐ Energy	☒ Noise	☐ Mandatory Findings of Significance
☐ Geology/Soils		

DETERMINATION:

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

A draft MITIGATION REPORTING AND MONITORING PROGRAM has been included in Appendix A herein.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect: (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards; and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

_____ _____
Signature (Prepared by) Date

_____ _____
Signature (Approved by) Date

EVALUATION OF ENVIRONMENTAL IMPACTS:

(1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources the Lead Department cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

(2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

(3) Once the Lead Agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

(4) "Less than Significant with Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less than Significant Impact." The Lead Agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level.

(5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA processes, an effect has been adequately analyzed in an earlier EIR or negative declaration (Section 15063[c][3][D] of the State CEQA Guidelines). In this case, a brief discussion should identify the following:

   (a) Earlier Analysis Used. Identify and state where they are available for review.
   (b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of, and adequately analyzed in, an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
   (c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

(6) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

(7) The explanation of each issue should identify: the significance threshold, if any, used to evaluate each question, and; mitigation measures identified, if any, to reduce the impact to less than significance. Sources of thresholds include the “Guidelines for the Implementation of the California Environmental Quality Act” (State CEQA Guidelines), the “City of Irwindale General Plan Update 2020” (General Plan), and other City planning documents. Some thresholds are unique to geographical locations.

(8) Climate Change Impacts: When determining whether a project’s impacts are significant, the analysis should consider, when relevant, the effects of future climate change on: (1) worsening hazardous conditions that pose risks to the project’s inhabitants and structures (e.g., floods and wildfires), and (2) worsening the project’s impacts on the environment (e.g., impacts on special status species and public health).

LIST OF REFERENCED FIGURES (Appendix B)

Figure	
1	Assessor's Parcel Maps
2	Conceptual Site Plan
3	Alternative Site Plan No. 1 – Single-Building Alternative
4	Alternative Site Plan No. 2 – 5-Building Alternative
5	Project Description – Composite Traffic Assumptions
6	Aerial Photograph
7	Current Site Features
8	Seismic Hazard Zones – Baldwin Park Quadrangle (1999)
9	Geologic Map of the Baldwin Park 7.5' Quadrangle, Los Angeles County, California (1997)
10	San Gabriel River Watershed
11	San Gabriel Valley Area 2 – Baldwin Park Superfund Site
12	FIRM No. 06037C1700F
13	Candidate Areas for Updated Designation in the Northern San Gabriel Production-Consumption Region, Los Angeles County, California

APPENDICIES

Appendix	
A	Arrow Highway Business Park Draft Mitigation Reporting and Monitoring Program
B	Arrow Highway Business Park Referenced Figures
C	Arrow Highway Business Park Air Quality and Greenhouse Gas Analysis (Environmental Impact Sciences, August 2014)
D	Arrow Highway Business Park Architectural and Historic Building Assessment (Archaeological Associates, August 16, 2014)
E	Arrow Highway Business Park Phase I Environmental Site Assessment (SCS Engineers, July 3, 2014)
F	Arrow Highway Business Park Acoustical Analysis (Environmental Impact Sciences, August 2014)
G	Arrow Highway Business Park Traffic Impact Analysis (Sasaki Transportation Services, August 13, 2013)

1.0 AESTHETICS

	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
(a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
No designated scenic vistas have been identified in the project area.				
(b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings, within a State scenic highway?	☐	☐	☐	☒
The project site is not located in the vicinity of a State scenic highway.				
(c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☒
The project site is located within an existing industrial area and previously used for industrial purposes. The property's existing visual character is, therefore, reflective of the nature of the area's existing land uses.				
(d) Create a new source of substantial shadows, light, or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

A limited number of single-family residences (located along the west side of Morada Street) and Our Lady of Guadalupe Mission Church (located at the northwesterly corner of Arrow Highway and Morada Street) are located to the east of the project site. Although the subject property is now vacant, a number of industrial and related uses previously existed on the project site, including Arrow Automotive Services (16233 Arrow Highway), located directly adjacent to the existing single-family homes and church. The visual character of both the subject property and that of abutting properties is characteristic of an urban setting where night lighting is prevalent.

As discussed under Section 13.0(a) herein, in order to address potential operational noise impacts, mitigation has been formulated to either preclude truck traffic along the east side of the facility or to require the installation of a perimeter wall (with a height of not less than 12 feet) along the site's easterly border. Similarly, the proposed site plans identifies a 10-foot wide landscape buffer along the site's eastern boundary.

As part of the site plan review process, as stipulated under Section 17.70.050 of the Municipal Code, among other items, lighting shall be "so arranged as to avoid traffic congestion, to ensure the public health, safety, and general welfare, and to prevent adverse effect on surrounding properties." In recognition of the site's existing setting, specified design features, recommended mitigation measure, and Municipal Code requirements, the proposed facility lighting will not result in a significant environmental impact.

2.0 AGRICULTURE / FOREST

Would the project:				
(a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒

	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
As indicated in the California Department of Conservation's Farmland Mapping and Monitoring Program (FMMP), the project site does not include lands designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) (Source: Los Angeles County Important Farmland 2010).				
(b) Conflict with existing zoning for agricultural use or with a Williamson Act contract?	☐	☐	☐	☒
The project site is not zoned for agricultural use and no Williamson Act contract exists thereupon.				
(c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Section 12220[g] of the Public Resources Code), timberland (as defined in Section 4526 of the Public Resources Code), or timberland zoned Timberland Production (as defined in Section 51104[g]) of the California Government Code)?	☐	☐	☐	☒
The project site does not include lands designated as forest land, timberland, or timberland zoned for Timberland Production or lands meeting those statutory and regulatory definitions.				
(d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
The project site does not include lands designated as forest land, timberland, or timberland zoned for Timberland Production or lands meeting those statutory and regulatory definitions.				
(e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒
Because the project site does not include lands designated as either Farmlands or forest land, timberland, or timberland zoned for Timberland Production, implementation would neither directly nor indirectly impact those lands or the resources located thereupon.				

3.0 AIR QUALITY

Would the project:

(a) Conflict with or obstruct implementation of applicable air quality plans of the South Coast Air Quality Management District (SCAQMD)?	☐	☒	☐	☐
Based on the relatively low threshold of significance criteria formulated by the South Coast Air Quality Management District (SCAQMD), the City conducted an air quality assessment of the project's short-term (construction) and long-term (operational) criteria and greenhouse gas (GHG) emissions. That analysis, included as Appendix C (Arrow Highway Business Park - Air Quality and Greenhouse Gas Analysis) herein, concluded that the proposed project, as mitigated, would not result in any significant air quality impacts. The following mitigation measure is identified therein:				

	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact

(Continued)

- ***Mitigation Measure No. 1****. Option No. 1 - Painting and surface coating shall be limited to an aggregate area of no more than 6,435 square feet per day during any phase of construction; or Option No. 2 - Paints and surface coatings shall be limited to no more than 121 milligrams per liter of Volatile Organic Compounds (VOC) content.*

As mitigated, air quality impacts would be reduced to a less-than-significant level.

(b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☒	☐	☐

See Appendix C (Arrow Highway Business Park - Air Quality and Greenhouse Gas Analysis).

(c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐

See Appendix C (Arrow Highway Business Park - Air Quality and Greenhouse Gas Analysis).

(d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐

As indicated in Appendix C (Arrow Highway Business Park - Air Quality and Greenhouse Gas Analysis), because the South Coast Air Basin (SCAB or Basin) is non-attainment for particulate matter, screening table threshold values for both PM_{10} and $PM_{2.5}$ are particularly stringent. During site preparation, PM_{10} and $PM_{2.5}$ emissions are projected to exceed their corresponding threshold values, thus warranting mitigation. Implementation of the following recommended measure would reduce emissions of particulate matter to a less-than-significant level.

- ***Mitigation Measure No. 2****. Daily site watering during earthmoving activities shall be increased from the requisite twice to no less than three times and all dozers (or equivalent pieces) used in earth movement shall be equipped with no less than Level 1 diesel particulate filters.*

With regards to toxic air contaminants (TACs), in 2000, the SCAQMD conducted a study on ambient concentrations of TAC and estimated the potential health risks from air toxics. Although concentrations and risk levels, the results showed that the overall risk for excess cancer from a lifetime exposure to ambient levels of air toxics was about 1,400 in one million (1,400 x 10^{-6}). The largest contributor (71 percent) was diesel exhausts.

Designated "truck traffic routes" are identified in Exhibit 4-1 (Designated Truck Routes in Irwindale) and Table 4-9 (Major Designated Truck Routes in Irwindale) in the "Circulation Element" of the General Plan. Arrow Highway, Live Oak Avenue, and Irwindale Avenue are included therein. The General Plan notes: "'Truck traffic routes' have been established within the City to accommodate vehicles that exceed 3 tons (6,000 pounds) maximum vehicle gross weight. The Municipal Code (Section 10.40.020) does not permit the movement or parking of such heavy vehicles on any streets other than the streets designated as 'truck traffic routes.'"

	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact

(Continued)

As indicated in the "Draft Environmental Impact Report for the Irwindale Materials Recovery Facility and Transfer Station, SCH No. 2013051029" (City of Irwindale, April 2014) (MRF-EIR), "[t]he greatest potential impact from TACs [toxic air contaminants] would be diesel particulate emissions from trucks during operations" (MRF-EIR, p. 3.3-40) and "[t]he maximum daily number of truck trips [associated with the materials recovery facility/transfer station (MRF/TS)] would be 2,456 truck round trips" (MRF-EIR, p. 3.3-31). Based on a health risk assessment (HRA) of that facility, the MRF-EIR concluded that "the maximum incremental cancer risks from all trucks using the MRF/TS and the service station would be 6.6 (residential adult receptor), 3.2 (residential child receptor), 1.0 (off-site worker), and 0.5 (school children receptor) cancers per million, which are less than the SCAQMD significance threshold of 10 in one million" (MRF-EIR, p. 3.3-41).

Since the project is expected to utilize trucks in daily operations, an estimated 33 percent of the average daily traffic volume of 750 ADT (Figure 5 [Project Description – Composite Traffic Assumptions]) was assumed to be trucks). The proposed project will generate a total of only 250 truck trips per day, representing only about 10.2 percent of the truck traffic identified in the MRF-EIR. It, therefore, can be reasonably concluded that the proposed project's potential health risks attributable to TACs would be substantially less than those attributable to the MRF/TS (i.e., less than significant).

(e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

See Appendix C (Arrow Highway Business Park - Air Quality and Greenhouse Gas Analysis).

4.0 BIOLOGICAL RESOURCES

Would the project:

(a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife (CDFW) or United States Fish and Wildlife Service (USFWS)?	☐	☐	☐	☒

As evident in Figure 6 (Aerial Photograph), only limited introduced vegetation presently exists thereupon. With the possible exception of invasive species, the project site is absent of native vegetation. As further illustrated in Figure 7 (Current Site Features), the project site had previously been and remains highly disturbed.

(b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS?	☐	☐	☐	☒

As evident in Figure 6 (Aerial Photograph), no sensitive natural communities exist on the project site.

4.0 BIOLOGICAL RESOURCES (Continued)

	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
(c) Have a substantial adverse effect on federally or State protected wetlands (including, but not limited to, marshes, vernal pools, coastal wetlands, and drainages) or waters of the United States, as defined by Section 404 of the federal Clean Water Act or Section 1600 et seq. of the California Fish & Game Code through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒

As evident in Figure 6 (Aerial Photograph), no federally or State-protected wetlands exist on the project site.

(d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒

Since the project site does not possess significant habitat value, implementation would not substantially interfere with the movement of any native species.

(e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒

Since the project site does not possess significant habitat value, implementation would not conflict with any local policies or ordinances designed to protect biological resources.

(f) Conflict with the provisions of an adopted State, regional, or local Habitat Conservation Plan, Natural Resource Conservation Plan, or other approved State, regional, or local habitat conservation plan?	☐	☐	☐	☒

There are no known State, regional, or local habitat conservation plans that include or affect the project site.

5.0 CULTURAL RESOURCES

Would the project:

(a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the State CEQA Guidelines?	☐	☐	☒	☐

As presented in Appendix D (Arrow Highway Business Park - Architectural and Historic Building Assessment), an architectural and historic building assessment was conducted of the remnant structure located at 16203 Arrow Highway in order to determine if that structure is of architecturally or historically importance. The ruin was evaluated for eligibility as a California Register of Historical Resources (CRHR). The results of the records search conducted at the South Central Coastal Information Center at California State University, Fullerton indicated that no prehistoric or historic sites have been previously recorded within the boundaries of the study area. The architectural and historical analysis of the circa 1925 structure resulted in the determination that the structure does not constitute a significant historical resource under CEQA.

	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
(Continued)				
No further work in conjunction with this resource is, therefore, recommended. Subsequent monitoring of the demolition and future earth-disturbing activities is neither recommended nor warranted.				
(b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the State CEQA Guidelines?	☐	☐	☒	☐
See Response No. 5(a) above.				
(c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature indicating potential paleontological resources?	☐	☐	☐	☒
The project site has been previously disturbed and no evidence exists to suggest the presence of any unique paleontological resources or unique geologic features thereupon.				
(d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒
There is no information suggesting that human remains may be interred on the project site. In the event that human remains are encountered during the course of any future development, Section 7050.5 of the H&SC and Section 5079.98 of the PRC state that no further earth disturbance shall occur at the location of the find until the Los Angeles County Coroner (Coroner) has been notified. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC). The NAHC will determine and notify a "most likely descendant" (MLD).				

6.0 ENERGY

Would the project:

(a) Conflict with any local ordinance or policies relating to energy use or conservation?	☐	☐	☐	☒
The proposed project is subject to compliance with all applicable State and local building codes and conservation requirements, including those relating to energy and water conservation. Compliance with those existing obligations will ensure that energy resources are not utilized inefficiently.				
(b) Involve the inefficient use of energy resources?	☐	☐	☐	☒
The proposed project is subject to compliance with all applicable State and local building codes and conservation requirements, including those relating to energy and water conservation. Compliance with existing statutes, regulations, and standards does not constitute mitigation under CEQA.				

7.0 GEOLOGY AND SOILS

	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
(a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
(i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known active fault trace? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒

Effective on April 1, 1991, the State Legislature passed the Seismic Hazards Mapping Act (SHMA), codified in Division 2, Chapter 7.8 of the RPRC. The SHMA was adopted for the purpose of protecting the public from the effects of strong ground shaking, liquefaction, landslides or other ground failure, and other hazards caused by earthquakes. As required therein, the California Department of Conservation's (CDC) Division of Mines and Geology, now the California Geological Survey, was directed to delineate the various "seismic hazard zones" located throughout the State.

The project site is located in the United States Geological Survey's (USGS) 7.5-Minute Baldwin Park Topographic Quadrangle. As illustrated in Figure 8 (Seismic Hazard Zones – Baldwin Park Quadrangle [1999]), the project site is not located within or in close proximity to designed "liquefaction" or "earthquake-induced landslides" zones (Source: CDC, Seismic Hazard Zones – Baldwin Park Quadrangle, March 25, 1999).

The Alquist-Priolo Earthquake Fault Zoning Act (APEFZA), formally called the Alquist-Priolo Special Studies Zone Act, codified in Section 2621 et seq. in Chapter 7.5 of Division 2 of the PRC, was adopted to "provide policies and criteria to assist cities, counties, and State agencies in the exercise of their responsibilities to prohibit the location of developments and structures for human occupancy across the trace of active faults" (Section 2621.5[a], PRC). An "active fault" is defined as one along which surface displacement has occurred within Holocene time (during the past 11,000 years).

The purpose of the APEFZA is to regulate land development near active faults in an effort to mitigate the hazard of surface fault rupture. The law requires the State Geologist to establish regulatory zones, known as "earthquake fault zones," around the surface traces of active faults and to issue maps identifying those zones. No corresponding APEFZA map has been prepared by the State Geologist for the Baldwin Park quadrangle. As a result, it can be concluded that no known active faults exist on or proximal to the project site.

(ii) Strong seismic ground shaking?	☐	☐	☒	☐

The project site is located within seismically-active southern California. As a result, the project site may be subject to strong seismic ground shaking during the life of the project. As indicated in "Seismic Hazard Zone Report for the Baldwin Park 7.5-Minute Quadrangle, Los Angeles, County, California" (California Department of Conservation, 1998), "the potential for strong earthquake ground shaking is high because of the many nearby active faults." All buildings will conform to applicable "Earthquake Design Regulations" specified in Section 1613 in Chapter 16 (Structural Design) of the California Building Code. Implementation of those requirements will ensure that seismic hazards are minimized to the maximum extent feasible. Compliance with existing statutes, regulations, and standards does not constitute mitigation under CEQA.

	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
(iii) Seismic-related ground failure, including liquefaction and lateral spreading?	☐	☐	☒	☐
See Response No. 7(a)(i) above.				
(iv) Landslides?	☐	☐	☒	☐
See Response No. 7(a)(i) above.				
(b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐

At the time grading plans and/or building permit applications are filed with the City, detailed engineering studies, consistent with the Los Angeles County Department of Public Works' (LACDPW) "Hydrology Manual" (2006), shall be submitted for review and approval by the City Engineer. In addition, as required under the "Construction General Permit," the Applicant shall prepare a storm water pollution prevention plan (SWPPP) prior to the commencement of grading operations and implement that plan during construction.

The City is required to conduct monitoring and reporting to ensure that Best Management Practices (BMPs) are correctly implemented and effective in controlling the discharge of pollutants. Implementation of those requirements will ensure that soil erosion is minimized to the maximum extent feasible. Compliance with existing statutes, regulations, and standards does not constitute mitigation under CEQA.

(c) Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐

As illustrated in Figure 9 (Geologic Map of the Baldwin Park 7.5' Quadrangle, Los Angeles County, California [1997]) (Tan, Siang S., Open File Report 98-30, California Department of Conservation, Division of Mines and Geology, 1997), the project site comprised of younger (Holocene-age) alluvium, gravel. No earthquake faults or landslides are depicted on or near the project site.

As reported in the "Seismic Hazard Zone Report for the Baldwin Park 7.5-Minute Quadrangle, Los Angeles County, California, Seismic Hazard Zone Report 022" (California Department of Conservation,, Division of Mines and Geology, 1998), "many of the Holocene alluvial deposits in the study area contain a significant amount of gravel. In the past, gravelly soils were considered not to be susceptible to liquefaction because the high permeability of these soils presumably would allow the dissipation of pore pressures before liquefaction could occur. However, liquefaction in gravelly soils has been observed during earthquakes, and recent laboratory studies have shown that gravelly soils are susceptible to liquefaction" (Section 1: Liquefaction Evaluation Report, pp. 11-12).

As indicated in Section 15.04 in Title 15 (Building and Construction) of the Municipal Code, except as otherwise provided, the City has adopted the Los Angeles County Building Code, 2011 Edition (Title 26 of the County Code). In accordance therewith, prior to the issuance of building permits, unless otherwise waived, the City will require that the Applicant submit a preliminary soils report, prepared by a State-licensed engineer, based on adequate test borings and excavations. To the extent required, the report will contain design and development recommendations to ensure that the resulting development provides for the public safety. Compliance with existing statutes, regulations, and standards does not constitute mitigation under CEQA.

7.0 GEOLOGY AND SOILS (Continued)

	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
(d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
See Response No. 7(c) above.				
(e) Have soils incapable of adequately supporting the use of on-site wastewater treatment systems where sewers are not available for the disposal of wastewater?	☐	☐	☒	☐
The project will be connected to an existing sanitary sewer.				

8.0 GREENHOUSE GAS EMISSIONS

Would the project:

(a) Generate greenhouse gas (GHGs) emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
Based on the relatively low threshold of significance criteria formulated by the SCAQMD, the City conducted a detailed air quality assessment of the project's short-term (construction) and long-term (operational) criteria and greenhouse gas (GHG) emissions. That analysis, included as Appendix C (Arrow Highway Business Park - Air Quality and Greenhouse Gas Analysis) herein, concluded that the proposed project would not result in any significant GHG emission impacts and, with regards to GHG emissions, no mitigation measures or other air quality-related conditions of approval are required or recommended.				
(b) Conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐
See Appendix C (Arrow Highway Business Park - Air Quality and Greenhouse Gas Analysis).				

9.0 HAZARDS AND HAZARDOUS MATERIALS

Would the project:

(a) Create a significant hazard to the public or the environment through the routine transport, storage, production, use, or disposal of hazardous materials?	☐	☐	☒	☐
The proposed project does not involve the routine transport, storage, production, use, or disposal of hazardous materials. Limited quantities of those materials may, however, be present and consumed on the project site.				
Under Superfund Amendments and Reauthorization Act (42 USC 9601 et seq., 11000 et seq.) (SARA) Title III, local fire departments and other parties receive annual notice regarding the nature of materials that are present on a project site. So notified, emergency service providers can safely respond to any unset conditions that may occur. In addition, under Proposition 65, additional community notification is provided. The project will comply with all reporting and notification requirements associated therewith.				

	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact

(Continued)

Transportation of both hazardous materials and hazardous wastes are regulated by the United States Department of Transportation (USDOT), under the authority of the Hazardous Materials Transportation Act. Federal Resource Conservation and Recovery Act (RCRA) rules also include provisions regarding the transportation of hazardous wastes. Compliance with existing statutes, regulations, and standards does not constitute mitigation under CEQA.

(b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials or waste into the environment?	☐	☒	☐	☐

No "reasonably foreseeable upset and accident conditions" have been identified. The project will neither generate any substantial quantity of hazardous emissions nor result in the "on-site" storage, use, and consumption of any substantial quantity of hazardous materials and/or wastes.

The project will neither generate any substantial quantity of hazardous emissions nor result in the "on-site" storage, use, and consumption of any substantial quantity of hazardous materials and/or wastes. A limited quantity of toxic air contaminants (TACs), primarily diesel exhaust emissions, will likely be generated both during the project's construction and operation. Diesel particulates (diesel PM) are emitted from diesel-fueled mobile sources (on-road vehicles and off-road mobile sources) and would be generated by diesel-fueled construction equipment and by any diesel-fueled vehicles associated with the project's operation and maintenance. Any diesel PM construction emission would be short-term in duration and of limited quantity, typical of any construction project.

Included as Appendix E (Arrow Highway Business Park - Phase I Environmental Site Assessment) herein is a Phase I environmental site assessment conducted for the purpose of identifying and, as necessary, initiating a process for the remediation of any hazardous materials and petroleum products that may presently exist on the project site. The "Phase I Environmental Assessment: 16203-16233 Arrow Highway, Irwindale, California 91706" (SCS Engineers, July 3, 2014) (Phase I ESA) was prepared in accordance with 40 CFR 312 (Innocent Landowners, Standards for Conducting All Appropriate Inquiries) and in general conformance with the ASTM International's (ASTM) "Standard Practice ASTM E1527-13: Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process" (2013) and included both an examination of the project site and a search of selected governmental databases extending up to one mile from the subject property.

The United States Environmental Protection Agency's (USEPA) "all appropriate inquiry" (AAI) rule (40 CFR Part 312) defines the amount and type of inquiry required to determine the previous ownership and uses of a property for the purposes of meeting the AAI provisions necessary to qualify for certain landowner liability protections under the federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

As indicated in the Phase I ESA:

(1) Based on known or likely original construction date for structures on the subject property, it is possible that ACMs [asbestos-containing materials] are present at the 16203 and 16223 parcels. Converse Consultants conducted an asbestos survey of the 16233 Property in 2004 and confirmed asbestos was present in the main building (western side of the parcel) and requires abatement (Phase I ESA, pp. iv and 28);

(Continued)

(2) Sampling of the soil stockpile observed at 16203 Arrow Highway is recommended to characterize the material and determine its waste characteristics (Phase I ESA, pp. v, 25, and 28);
(3) Several septic tanks are present on the subject property that may have received industrial wastes; however, the locations of the septic tanks and possible associated leach lines have not definitively been identified. When the locations of the septic tanks are determined during demolition and grading, additional investigation of these areas should be conducted to assess the potential for releases (Ibid);
(4) The removal of the 1,200-gallon clarifier (or stormwater interceptor) is recommended and should be conducted under Los Angeles County Department of Public Works (LACDPW) oversight (Ibid); and
(5) An attempt to retrieve the analytical laboratory report for soil vapor data collected at 16233 Arrow Highway in 2004 should be made. The report should be reviewed to determine if the detection limits were adequate to determine if VOCs are present and/or evaluate any associated health risks. If the laboratory report cannot be provided, further evaluation is warranted (Ibid).

The following mitigation measure has been formulated in response to the findings of the Phase I ESA:

- ***Mitigation Measure No. 3**. The Applicant shall demonstrate to the satisfaction of the City Engineer that the following recognized environmental conditions described in the "Phase I Environmental Assessment: 16203-16233 Arrow Highway, Irwindale, California 91706" (SCS Engineers, July 3, 2014) have been adequately addressed and any public health and safety issues associated therewith have either been eliminated or reduced to a less-than-significant level: (1) the soil stockpile located at 16203 Arrow Highway has been sampled in accordance with accepted industry standards in order to characterize the material, determine its composition, and take appropriate actions; (2) identify and conduct samples of any industrial wastes located in all on-site septic tanks; (3) operating under the oversight of the Los Angeles County Department of Public Works (LACDPW), undertake the removal of the on-site clarifier; and (4) either retrieve the analytical laboratory report for soil vapor data collected at 16233 Arrow Highway in 2004 or conduct new sampling in order to determine if volatile organic compounds (VOCs) are present and, if present, evaluate any associated health risks.*

Buildings constructed or remodeled prior to 1981 have the potential of containing friable and non-friable asbestos-containing materials (ACMs) and asbestos-containing construction materials (ACCMs). Friable asbestos-containing building materials (ACBM) are defined by the United States Environmental Protection Agency (USEPA) and the SCAQMD as materials that, when dry, can be easily pulverized, crushed, or reduced to a powder by hand pressure. Non-friable ACBM is a material that can be broken, crumbled, pulverized, or reduced to powder during demolition or renovation activities.

All asbestos-related work must be completed in accordance with the following regulations: (1) SCAQMD Rule 1403; (2) National Emissions Standards for Hazardous Air Pollutants (40 CFR 61, M); (3) Occupational Safety and Health Administration, Asbestos in the Workplace (29 CFR 1910.1001); (4) Occupational Safety and Health Administration, Asbestos Construction Standard (29 CFR 1926.1101); and (5) Section 1529, Title 8, California Code of Regulations, Cal-OSHA Construction Standard).

In 1978, paints containing more than 0.06 percent (by weight of dried product) lead were banned for use in the United States (16 CFR 1303). "Lead-based paints" are defined as any "paint, surface coating that contains lead equal to or exceeding one milligram per square centimeter (1.0 mg/cm2) or 0.5% by weight." Buildings constructed or remodeled prior to 1978 may, therefore, contain lead-based paint (LBP).

(Continued)

Based on the potential presence of ACMs, ACCMs, and LBP within the on-site structures to be demolished as part of the proposed project, the following mitigation measures are recommended:

- ***Mitigation Measure No. 4****. Prior to the demolition of any pre-1981 buildings or structures located on the project site, a pre-demolition survey will be conducted to the satisfaction of the Community Development Director to determine the potential presence of asbestos-containing materials (ACMs) and/or asbestos-containing construction materials (ACCMs) in those existing buildings and structures to be demolished. If ACMs and/or ACCMs are determined to be present in those buildings and structures to be demolished, all such materials shall be removed in accordance with acceptable engineering methods and work practices by a licensed asbestos abatement contractor prior to demolition. The process shall be designed and monitored by a California Certified Asbestos Consultant and an abatement and monitoring plan shall be developed and submitted for review and approval by the appropriate regulatory agencies.*
- ***Mitigation Measure No. 5****. Prior to the demolition of any pre-1978 buildings or structures located on the project site, a pre-demolition survey will be conducted to the satisfaction of the Community Development Director to determine the potential presence of lead-based paint (LBP) in those existing buildings and structures to be demolished. Should LBP be identified, standard handling and disposal practices shall be implemented pursuant to applicable Occupational Safety and Health Administration (OSHA) standards.*

Implementation of the recommended mitigation measures will reduce potential hazards and hazardous materials impacts to a less-than-significant level. In addition, the project site is zoned and has been utilized for industrial uses. The seller of real property who has actual knowledge that the property is affected by or zoned to allow commercial or industrial use described in Section 731(a) of the Code of Civil Procedure shall give written notice of that knowledge to purchasers as soon as practicable before transfer of title (Section 1102.17, California Civil Code). Section 731(a) of the Code of Civil Procedure defines "industrial use" as areas in which a city and/or county has established zones or districts under authority of law wherein certain manufacturing or commercial or airport uses are expressly permitted.

(c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐

Three schools, all part of the Azusa Unified School District, are located near the project site, including Valleydale Elementary School (700 S. Lark Ellen Avenue, Azusa 91702), Alice Ellington (K-7) (5034 N. Clydebank Avenue, Covina 91722), and Gladstone High School (1340 N. Enid Avenue, Covina 91722). Because the nearest of these schools (Alice Ellington) is located about 0.45 miles from the project site, the resulting impact is less than significant.

(d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Section 65962.5 of the California Government Code and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒

	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact

As stipulated under Section 65962.5 of the California Government Code (CGC): "(a) The Department of Toxic Substances Control [DTSC] shall compile and update as appropriate, but at least annually, and shall submit to the Secretary for Environmental Protection, a list of all of the following: (1) All hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code. (2) All land designated as hazardous waste property or border zone property pursuant to former Article 11 (commencing with Section 25220) of Chapter 6.5 of Division 20 of the Health and Safety Code. (3) All information received by the Department of Toxic Substances Control pursuant to Section 25242 of the Health and Safety Code on hazardous waste disposals on public land. (4) All sites listed pursuant to Section 25356 of the Health and Safety Code." As specified in Section 25356(a)(1) of the H&SC, the DTSC "shall adopt, by regulation, criteria for the selection of hazardous substance release sites for a response action under this chapter."

As indicated in Appendix E (Arrow Highway Business Park - Phase I Environmental Site Assessment), the project site is not included on a list of sites developed in response to either Section 65962.5 of the CGC and/or Section 25356 of the H&SC. The resulting impact is, therefore, less than significant.

(e) For a project located within an airport land-use plan, or where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒

The project site is not located within an airport land-use plan area.

(f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒

The project is not located in the vicinity of a private airstrip.

(g) Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒

The project site has not been identified in an adopted "emergency response" or" emergency evacuation" plan.

(h) Expose people or structures to a significant risk of loss, injury or death involving fires, because the project is located:

(i) Within a Very High Fire Hazard Severity Zones?	☐	☐	☐	☒

As depicted in Map. 2-11 (Very High Fire Hazard Severity Zone – Irwindale) in the "City of Irwindale 2012 Hazard Mitigation Plan" (Emergency Planning Consultants, February 11, 2013, as adopted February 27, 2013,), the project site is not located within a "Very High Fire Hazard Severity Zone" (VHFHSZ), as designated by the California Department of Forestry and Fire Protection.

(ii) Within a high fire hazard area with inadequate access?	☐	☐	☒	☐

	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact

Fire protection services in the City are provided by the Los Angeles County Fire Department (LACFD). The LACFD operates from Station No. 48 (15546 Arrow Highway), located near the intersection of Arrow Highway and Azusa Canyon Road. Neither the project site nor the general project area has been designated by the LACFD or by any other agency as a "high fire hazard area." All development within the jurisdiction of the Los Angeles County Fire Department shall comply with all applicable provisions of Title 32 (Fire Code) of the County Code. Compliance with existing statutes, regulations, and standards does not constitute mitigation under CEQA.

(iii) Within an area with inadequate water and pressure to meet fire flow standards?	☐	☒	☐	☐

Fire flow requirements are determined by occupancy classification, type of construction, and the square footage of the construction proposed. Although "Industrial Group F" (i.e., "Factory Industrial Group F occupancy includes, among others, the use of a building or structure, or a portion thereof, for assembling, disassembling, fabricating, finishing, manufacturing, packaging, repair or processing operations that are not classified as a Group H hazardous or Group S storage occupancy" [Section 306.1 in Title 24, Part 2, Chapter 3 of California Code of Regulations]) is assumed, a different use and occupancy classification (or multiple uses and classifications) could apply. Absent consultation with the LACFD, precise fire flow requirements cannot be determined at this time.

In order to ensure that sufficient fire flow, including pressure rating and duration, is available to adequately serve the proposed project and in order to ensure that the project design fully conforms to all applicable fire safety requirements, the following mitigation measure has been identified: Implementation of this measure will ensure that the proposed project is constructed in accordance with all applicable public safety standards.

- ***Mitigation Measure No. 6**. Prior to the issuance of any building permits, in accordance with Los Angeles County Fire Department (LACFD) procedures and requirements, the Applicant shall submit development and related plans to the LACFD's Fire Prevention Bureau for review and, when deemed acceptable, the LACFD shall approve or conditionally approve those plans as submitted or as subsequently modified. Any design recommendations formulated by the LACFD for the purpose of enhancing fire protection and/or public safety shall be incorporated into the project's final design and development plans and shall constitute compliance obligations with regards to the proposed project.*

(iv) Within proximity to land uses that have the potential to produce for dangerous fire hazards?	☐	☐	☒	☐

The project site is located within an existing industrial area. Industrial uses have the potential to contain hazardous, flammable, and explosive materials. Fires emanating from those sites can, therefore, release toxic air contaminants and expose near-site receptors to thermal radiation (fire) and blast overpressure (explosion). As depicted in Figure 6-4 (Regulated Sites) in the "City of Irwindale General Plan Update 2020" (City of Irwindale, June 2008) (General Plan), a number of "hazardous waste" sites are located along Arrow Highway, in proximity to the proposed project. As indicated in the "City of Irwindale 2012 Hazard Mitigation Plan" (Emergency Planning Consultants, February 11, 2013, as adopted February 27, 2013), proximal generators or users of hazardous materials include, but may not be limited to: (1) Active Transmission (16327 Arrow Highway, Irwindale); (2) IDR Environmental Services (16233 E. Arrow Highway, Irwindale) ; (3) AZB Enterprises (16300 Arrow Highway, Unit O, Irwindale); (4) Diesel Comp (16300 Arrow Highway, Irwindale); (5) Livingston Graham (16080 Arrow Highway, Irwindale); (6) Allergan Medical Optics (15715 Arrow Highway, Irwindale); and (7) Harry Hill Imports (15507 Arrow Highway, Irwindale) (Table 2-14, pp. 116-118).

	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact

(Continued)

It is assumed that all proximal land uses are operated and maintained in a safe manner and in strict accordance with all applicable local, State, and federal regulations relative to the precise nature and operational characteristics of those uses.

10.0 HYDROLOGY AND WATER QUALITY

Would the project:

(a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐

The Municipal Code contains numerous provisions effectively regulating the discharge of pollutants. For example, as stipulated in Chapter 8.28 (Storm Water and Urban Runoff Pollution) in Title 8 (Health and Safety) of the Municipal Code:

(1) "No person shall cause or allow an illicit discharge to enter the municipal storm water system' (Section 8.28.050[A]);
(2) "No person shall maintain or intentionally use a connection that operates to convey an illicit discharge to the municipal storm water system" (Section 8.28.060[A]);
(3) "No person shall cause or threaten to cause the discharge of pollutants to the MS4 by exposing such pollutants to storm water runoff" (Section 8.28.070[A]);
(4) "It shall be a violation of this chapter for any industry in the city that is subject to waste discharge requirements specified in the SWRCB Water Quality Order No. 97-03-DWQ, Permit No. CAS00001, any revision or a reissuance thereof, to operate without a General Industrial Activities Storm Water NPDES Permit" (Section 8.28.090[A]);
(5) "Industrial facilities not subject to the General Industrial Activities Storm Water NPDES Permit but are subject to pollution control requirements under the municipal NPDES permit, shall implement BMPs prescribed by the regional board or its executive officer, through programs or actions made pursuant to the municipal NPDES permit: (Section 8.28.100[A]);
(6) "Prior to the construction of a new development or redevelopment project, the subject project shall be evaluated for its potential to discharge pollutants to the MS4, based on its intended land use and other considerations. Such evaluation shall be conducted in accordance with development planning requirements established by the regional board or its executive officer, pursuant to the municipal NPDES permit, as specified in the City's Storm Water Quality Management Program, including any revisions made thereto" (Section 8.28.130[A]); and
(7) "Once a new development or redevelopment project has been evaluated for its potential to discharge pollutants to the MS4, the city shall require appropriate BMPs to be installed during construction for implementation following project completion. The prescription of such BMPs shall be in keeping with development planning requirements established by the regional board or its Executive Officer, pursuant to the municipal NPDES permit, as specified in the city's Storm Water Quality Management Program, including any revisions made thereto" (Section 8.28.130[A]).

Compliance with those requirements and standards will ensure that the project will not violate any water quality standards or waste discharge requirements.

	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact

(Continued)

As illustrated in Figure 10 (San Gabriel River Watershed), the project site is located within the San Gabriel River Watershed, north of Big Dalton Wash and west of Little Dalton Wash. The site is within the jurisdiction of the Los Angeles Regional Water Quality Control Board (LARWQCB) and the project is subject to the water quality standards and waste discharge requirements contained in the "Water Quality Control Plan, Los Angeles Region" (LARWQCB, 1994) (Basin Plan).

Administrative updates to the Basin Plan have occurred in phases. The administrative update of Chapter 2 (Beneficial Uses) was completed in November 2011 (Resolution No. R11-011), the administrative update of Chapter 7 (TMDLs) was completed in December 2011 (Resolution No. R11-013), and the administrative update of Chapter 3 (Water Quality Objectives) was completed in May 2013 (Resolution No. R13-003). On or around September 14, 2014, the LARWQCB will consider adoption of non-regulatory, administrative updates to Chapter 1 (Introduction), Chapter 5 (Plans and Policies), and Chapter 6 (Monitoring and Assessment) of the Basin Plan. These amendments do not involve changes to water quality standards or their implementation provisions and are intended solely to provide more current information and improve the clarity of the Basin Plan.

On November 8, 2012, the LARWQCB adopted Order No. R4-2012-0175 (Waste Discharge Requirements for Municipal Separate Storm Sewer System Discharges within the Coastal Watersheds of Los Angeles County), issuing to the Los Angeles County Flood Control District (LACFCD), to the County, and to 84 incorporated cities, excluding the City of Long Beach (Permittee) a National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit and establishing waste discharge requirements for storm water and non-storm water discharges by the from MS4 within the County's coastal watersheds, including the San Gabriel River. Development projects subject to Permittee conditioning and approval for the design and implementation of post-construction controls to mitigate storm water pollution, prior to completion of the project, include, but are not limited to: (1) all development projects equal to one acre or greater of disturbed area and adding more than 10,000 square feet of impervious surface area; (2) industrial parks 10,000 square feet or more of surface area; and (3) parking lots 5,000 square feet or more of impervious surface area or with 25 or more parking spaces. The proposed project is subject to compliance with the performance criteria specified therein.

In addition, the Applicant will be required to prepare a standard urban storm water mitigation plan (SUSMP) and identify applicable BMP to control storm water pollution from sediments, erosion, and construction materials leaving the construction site. Compliance with those requirements and standards will ensure that the project will not violate any water quality standards or waste discharge requirements.

(b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒

The proposed project does not involve the direct withdrawal of groundwater resources

	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact

(Continued)

As indicated in the Phase I ESA, the project site is located in the San Gabriel Valley Groundwater Basin. Based on review of groundwater monitoring data at the Azusa Land Reclamation Landfill, located approximately 0.40 miles to the north of the subject property, groundwater in this area is located at approximately 290 feet below ground surface and has fluctuated within a range of about 90 feet since 1984 in response to precipitation, extraction, and replenishment operations in the basin. Regional groundwater flow direction is anticipated to be westerly to southwesterly.

As illustrated in Figure 11 (San Gabriel Valley Area 2 – Baldwin Park Superfund Site), the project site is located above or in close proximity to a USEPA-designated "San Gabriel Valley Area 2 – Baldwin Park Operating Unit" National Priority List (Superfund) site. Carbon tetrachloride, PCE, TCE, perchlorate, N-nitrosodimethylamine, and 1,4-dioxane are the primary groundwater contaminants in that operating unit. As indicated in the Phase I ESA, the plume maps depict the subject property approximately 0.5 miles to the east of the mapped groundwater plumes associated with the "Baldwin Park Operating Unit" (Phase I, p. 4). The attached graphic suggests a closer proximity. No evidence exists to indicate that either existing or previous activities conducted on the project site materially contributed to the causation of the extensive groundwater contamination in the San Gabriel Valley. Absence the presence of VOCs, semi-volatile organic compounds (SVOCs), total petroleum hydrocarbons (TPH), and/or polyclorinated biphenyls (PCBs) above actionable levels, no substantive adverse public health impacts have been identified to those land uses located above in close proximity to those contaminants.

(c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐

No streams, rivers, or flood control channels are located on the project site. Since the project site has been previously developed, the quantity, quality, and pattern of on-site drainage will not be substantially altered.

(d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐

See Response No. 10(c) above.

(e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐

See Response No. 10(c) above.

(f) Generate construction or post-construction runoff that would violate applicable storm water NPDES permits or otherwise significantly affect surface water or groundwater quality?	☐	☐	☒	☐

	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
See Response No. 10(a) above.				
(g) Place housing within a 100-year flood-hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
The proposed project does not include residential development.				
(h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☒	☐
As illustrated in Figure 12 (FIRM No. 06037C1700F), the project site is included on the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map (FIRM) 06037C1700F. As depicted therein, the project site is located in "Zone X" (Areas determined to be outside the 0.2% annual chance flood).				
(i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☒	☐

The Alquist Dam Safety Act (Section 8589.5, CGC) requires dam owners to submit inundation maps for those dams whose total failure would cause loss of life or personal injury and requires local jurisdictions to adopt emergency procedures for the evacuation and control of populated areas below such dams.

Santa Fe Dam is not included within the dams within the State's jurisdiction (California Department of Water Resources, Bulletin 17-93, Dams within Jurisdiction of the State of California, 1993). The State, as well as the City, lacks any authority to regulate activities associated therewith. The Santa Fe Dam (National Identification No. CA10024 and California State Dam No. 9000-024) is a "flood risk management dam" located on the San Gabriel River and is owned and operated by the United States Army Corps of Engineers (ACOE). Flood risk management seeks to reduce flood risks by *managing the floodwaters to reduce the probability of flooding and by managing the floodplains to reduce the consequences of flooding. Flood risk management requires integrating and synchronizing programs at various levels of government designed to reduce flood risk (USACE, Institute of Water Resources). Accordingly, the Santa Fe Dam reservoir is operated as a dry dam serving to manage flood flows after major storm generated within its 236 square mile drainage basin. The project site is not located within the inundation hazard area for the Santa Fe Dam, as depicted in Map. 2-13 (Dam Inundation Area – City of Irwindale) in the "City of Irwindale 2012 Hazard Mitigation Plan" (Emergency Planning Consultants, February 11, 2013, adopted February 27, 2013).*

(j) Place structures in areas subject to inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Because the Santa Fe Dam reservoir is operated by the USACE as a dry dam, the potential for seiche would be minimal. As indicated in Figure 8 (Seismic Hazard Zones – Baldwin Park Quadrangle [1999]), the project site is not located within or in close proximity to a designed "earthquake-induced landslide" zone. Additionally, the California Department of Conservation has prepared "tsunami inundation maps" covering those portions of Los Angeles County subject to tsunami hazards. Recognizing the distance between the project site and the Pacific Ocean, no corresponding inundation hazard map has been prepared for the Baldwin Park 7.5-minute quadrangle (Source: California Department of Conservation, Los Angeles County Tsunami Inundation with USGS 24K Quads), thus indicating the absence of tsunami hazards within the City.

11.0 LAND USE AND PLANNING

	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
(a) Physically divide an established community?	☐	☐	☒	☐

As indicated in Exhibit 2-1 (Residential Neighborhoods in Irwindale) in the General Plan, the project site is not located within a "residential neighborhood." Although residential uses exist to the east of the project site (in the City of Irwindale), non-residential uses presently exist to the north, east, and west of the subject property.

(b) Be inconsistent with the applicable City plans for the subject property including, but not limited to, the General Plan, specific plans, local coastal plans, area plans, and community/ neighborhood plans?	☐	☐	☒	☐

The General Plan designation for the project site is "Industrial/Business Park." As described therein, the "Industrial designation corresponds to the CM (Commercial Manufacturing), M-1 (Light Manufacturing), and M-2 (Heavy Manufacturing) zones. The maximum FAR [floor-area-ratio] for this category is 1.0 to 1.0." Based on a site area of 6.25± acres (272,217± square feet) and a 133,000 square foot development plan, the resulting FAR is only 0.49 to 1.0, well within the maximum allowable density authorized under the General Plan. With regards to use and allowable density, the proposed project appears consistent with the General Plan.

(c) Be inconsistent with the City zoning ordinance as applicable to the subject property?	☐	☐	☒	☐

With the exception of the south-east corner of the project site (16233 Arrow Highway), which is zoned "Light Manufacturing (M-1)," the remainder of the project site (16203-16223 Arrow Highway) is zoned "Heavy Manufacturing (M-2)." Development standards for the "M-2 Heavy Manufacturing Zone" are presented in Chapter 17.56 of the Municipal Code. Permitted uses in the "M-2 Heavy Manufacturing Zone" include any use permitted in the M-1 zone and a small inventory of additional uses (Section 17.56.010, Municipal Code). Uses authorized subject to issuance of a conditional use permit include an inventory of 42 conditionally permitted uses (Section 17.56.020, Municipal Code).

Development standards for the "M-1 Light Manufacturing Zone" are presented in Chapter 17.52 of the Municipal Code. Permitted uses in the "M-1 Light Manufacturing Zone" include those uses allowable by right in the "C-M Commercial Manufacturing Zone," "C-2 Heavy Commercial Zone," "C-1 Commercial Zone," and "C-P Commercial Professional Zone" and are identified in Sections 17.52.010, 17.48.010, 17.40.010, 17.36.010, and 17.32.010 in the Municipal Code, respectively. Conditionally permitted uses are listed in Section 17.52.080 therein.

Although the number and precise nature of the site's end users have not been identified, it is assumed that those users are either permitted by right or conditionally permitted in the "M-1 Light Manufacturing Zone." The proposed project appears consistent with the Municipal Code.

(d) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

There are no known habitat conservation or natural community conservation plans that include the project site.

12.0 MINERAL RESOURCES

	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
(a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?	☐	☐	☒	☐

In 2010, as an update to "Special Report 143, Part IV (SR 143, Part IV) – Mineral Land Classification of the Greater Los Angeles Area, Part 1V, Classification of Sand and Gravel Resource Areas, San Gabriel Valley Production-Consumption Region" (Kohler, 1982), the California Department of Conservation, Division of Mines and Geology (DMG) released "Special Report 209: Update of Mineral Land Classification for Portland Cement Concrete-Grade Aggregate in the San Gabriel Valley Production-Consumption Region, Los Angeles County, California" (Kohler, 2010 (SR 209). Information from SR143-Part IV was used to assist the State Mining and Geology Board (SMGB) in a subsequent process called "designation." Designation is the formal recognition by the SMGB of lands containing mineral resources having regional or Statewide significance that are needed to meet future demands.

To address mineral resource conservation, the Surface Mining and Reclamation Act of 1975 (SMARA) mandated a two-phase process called "classification-designation" resulting in the classification of specified areas into "mineral resource zones" (MRZs). In accordance therewith, lands within the San Gabriel Valley P-C Region were classified in SR 143, Part IV as "MRZ-1" (little likelihood exists for the presence of significant mineral resources), "MRZ-2" (lands known to contain significant aggregate resources), "MRZ-3" (areas containing known or inferred mineral occurrences of undetermined mineral resource significance), or "MRZ-4" (Areas where available information is inadequate to assign any other classification).

In 1984, the SMGB formally designated construction aggregate resource areas of regional significance in the San Gabriel P-C Region. Since 1984, about 1,234 acres of the 4,642 acres of lands originally designated by the SMGB have been lost to land uses incompatible with mining. Conversely, SR 209 identified an additional 281 acres of land containing Portland cement concrete (PCC) grade aggregate in areas previously classified MRZ-3. Figure 13 (Candidate Areas for Updated Designation in the Northern San Gabriel Production-Consumption Region, Los Angeles County, California) is a byproduct of SR 209.

The project site is located within the San Gabriel Valley Production-Consumption (P-C) Region. In 2013, the State Geologist recommended designation of newly classified mineral resource lands and termination of designation of select mineral resource lands previously designated in the San Gabriel Production-Consumption (P-C) Region. On December 13, 2013, the SMGB adopted regulations amending Section 3550.5 of the California Code of Regulations (CCR) with regards to the designations and termination of designation of mineral resources areas therein. "Sector E" is located closest to the project site and contains six separate areas totaling 422 acres. The SMGB concluded that the resources located therein "have been lost to urbanization" and took action to terminate the designation of those areas. As a result, the proposed project will have a less-than-significant impact on known mineral resources.

(b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☒	☐

See Response No. 12(a) above.

13.0 NOISE

	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project result in:				
(a) Exposure of persons to, or generation of, noise levels in excess of standards established in the General Plan or noise ordinance or applicable standards of other agencies?	☐	☒	☐	☐

Based on the proximity of residential uses and Our Lady of Guadalupe Mission Church bordering the subject property on the east, the City conducted an acoustical analysis for the purpose of assessing the project's short-term (construction) and long-term (operational) noise impacts. That analysis, included as Appendix F (Arrow Highway Business Park – Acoustical Analysis) herein, concluded that the proposed project, as mitigated, would not result in any significant noise-related impacts. The following mitigation measures are recommended therein:

- ***Mitigation Measure No. 7****. Option No. 1. No truck traffic shall be allowed on the east side of the facility, signage to that effect shall be posted on the project site, and site operators shall enforce that restriction; or Option No. 2. The Applicant shall construct a sound wall along the eastern perimeter with a height of no less than 12 feet and no truck traffic shall be allowed along the east side of the structure between the hours of 10:00 PM and 7:00 AM.*

- ***Mitigation Measure No. 8****.* In order to reduce construction noise impacts to the maximum extent feasible, the following actions shall be taken during the project's construction: (1) The construction contractor shall schedule all construction activities, deliveries, and haul trucks during the daytime hours of 7:00 AM to 7:00 PM Monday through Saturday; (2) All construction equipment shall be properly maintained and tuned to minimize noise; (3) All equipment shall be fitted with properly operating mufflers and air intake silencers no less efficient than those originally installed by the manufacturer; (4) All stationary noise sources (e.g., generators and compressors) shall be located as far from residential receptors as feasible; (5) Sign shall be posted on the project site, clearly visible from the public right-of-way, providing contact information (e.g., name and telephone number of the construction contractor) in the event of a noise complaint, and (6) Construction shall be subject to any and all additional provisions as may be set forth by the City Engineer.

Implementation of the recommended measures will reduce construction and operational noise impacts to a less than significant level.

(b) Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?	☐	☐	☒	☐

See Appendix F (Arrow Highway Business Park – Acoustical Analysis).

(c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐

See Appendix F (Arrow Highway Business Park – Acoustical Analysis).

(d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐

See Appendix F (Arrow Highway Business Park – Acoustical Analysis).

13.0 NOISE (Continued)

	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
(e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐

The project site is not located within an airport land-use plan area.

(f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

The proposed project is not located within the vicinity of a private airstrip.

14.0 POPULATION AND HOUSING

Would the project:

(a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐

As reflected below, the Southern California Association of Governments (SCAG) has formulated projections relating to the number of jobs created by various land uses in Los Angeles County (Source: SCAG [The Natelson Company]), Employment Density Study Summary Report, October 31, 2001, Table B-1).

SIC Code	*Description*	*Employment Densities (employees per acre)*
1211	*Low to Medium Rise Major Office Use*	*55.28*
1311	*Manufacturing, Assembly, and Industrial Services*	*18.23*
1321	*Manufacturing*	*48.18*
1340	*Wholesaling and Warehousing*	*12.96*

Source: Southern California Association of Governments

Assuming a 6.25-acre project site, based on those generation rates, the proposed project would generate between 81 and 346 permanent jobs. The land-use category that is most characteristic of the proposed project is "manufacturing, assembly, and industrial services" (18.23 jobs/acre). Based on that rate, an estimated 114 jobs could be created by the proposed project. Sufficient labor force presently exists in the general project area to fill project-related employment opportunities, such that no substantial population growth would be anticipated.

(b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

No existing housing units will displaced as a result of the project's implementation.

	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
(c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

No individuals, persons, or parties will be displaced as a result of the project's implementation.

(a) Would the project create capacity or service level problems, or result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Fire protection?	☐	☒	☐	☐

Fire protection services in the City are provided by the Los Angeles County Fire Department (LACFD), which maintains one fire station in the City. Fire Station No. 48 (15546 Arrow Highway) is staffed with a 4-person engine company (1-Captain, 1-Fire Fighter Specialist, and 2-Fire Fighters) 24-hours a day. The anticipated emergency response time from this station to the project site would be anticipated to be less than four minutes.

As indicated in Response No. 9(h)(iii) above, in order to ensure that sufficient fire flow is available to adequately serve the proposed project and in order to ensure that the project design fully conforms to all applicable fire safety requirements, the following mitigation measure has been identified:

- ***Mitigation Measure No. 6**. Prior to the issuance of any building permits, in accordance with Los Angeles County Fire Department (LACFD) procedures and requirements, the Applicant shall submit development and related plans to the LACFD's Fire Prevention Bureau for review and, when deemed acceptable, the LACFD shall approve or conditionally approve those plans as submitted or as subsequently modified. Any design recommendations formulated by the LACFD for the purpose of enhancing fire protection and/or public safety shall be incorporated into the project's final design and development plans and shall constitute compliance obligations with regards to the proposed project.*

Implementation of this recommended mitigation measure will ensure that the proposed project is constructed in accordance with all applicable public safety standards and that no significant impacts will result therefrom.

Police protection?	☐	☐	☒	☐

Law enforcement services in the City are provided by the City of Irwindale Police Department. The City of Irwindale Police Department has jurisdiction over the City's 9.5 square miles and presently consists of 23 full-time police officers, 3 reserve officers, and 11 civilian employees. Although the precise nature of the existing land use will change, the proposed project is not anticipated to impose greater demands on Police Department personnel and services that associated with the existing uses.

Schools?	☐	☐	☒	☐

The project site is located within the boundaries of the Covina-Valley Unified School District. Within the general project area, the district's northwestern boundaries are framed by Arrow Highway and Azusa Canyon Road.

	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact

(Continued)

In 1986, Assembly Bill (AB) 2926 was enacted by the State and authorized entities to levy statutory fees on new residential and commercial/industrial development in order to pay for school facilities. AB 2926 was expanded and revised in 1987 through the passage of AB 1600 which created Section 66000 et seq. of the CGC. Under this statute, payment of such statutory fees by developers would serve as total mitigation in accordance with CEQA to satisfy the impact of development on school facilities. When noticed of a school facility exaction, a city or county may not issue a building permit to an affected development project until the district has certified that the project has complied with the school board's resolution or is not subject to the exaction.

Since the project does not include a residential component, no new Covina-Valley Unified School District students will directly result from the project's implementation. Additional students could, however, be indirectly generated through the creation of new employment opportunities within the Covina-Valley Unified School District boundaries. The Applicant is obligated to pay impact fees to the Covina-Valley Unified School District. Payment of school impact fees constitutes full mitigation for any associated impacts upon the affected school district. Compliance with existing statutes, regulations, and standards does not constitute mitigation under CEQA.

Parks?	☐	☐	☒	☐

The nearest public parks to the project site include the City's Jardin De Roca Park and Irwindale Park and the County's Santa Fe Dam Recreational Area. Based on the project's size and proposed use, implementation would not be expected to either directly or indirectly impact those or other proximal recreational facilities. Non-residential uses typically do not impose substantial demands on recreational services and park facilities.

Libraries?	☐	☐	☒	☐

The nearest library to the project site is the Irwindale Public Library (5050 North Irwindale Avenue, Irwindale). Based on the project's size and proposed use, implementation would not be expected to either directly or indirectly impact that or other available library facilities. Non-residential uses typically do not impose substantial demands on library services and facilities.

Other public facilities?	☐	☐	☐	☒

No additional public facilities which may be substantively impacted by the proposed project have been identified.

16.0 RECREATION

(a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐

See Response No. 15(a) (Parks) above.

(b) Does the project include neighborhood and regional parks or other recreational facilities or require the construction or expansion of such facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

The proposed project does not include neighborhood, regional, and/or other recreational facilities.

17.0 TRANSPORTATION / TRAFFIC

	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
(a) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but, not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☒	☐	☐

As indicated in Figure 5 (Project Description – Composite Traffic Assumptions), the proposed project is expected to generate a total of approximately 1,000 net new daily trips, including 148 net new morning (AM) peak hour trips (119 In and 29 Out) and 150 net new afternoon (PM) peak-hour trips (47 In and 103 Out) on a typical weekday. In accordance with the City's "Policy Guidelines for Traffic Impact Reports" (August 20, 2004), a "full traffic impact analysis" was prepared for the proposed project. That analysis, included as Appendix G (Arrow Highway Business Park – Traffic Impact Analysis) herein, concluded that the proposed project, prior to mitigation, would result in a significant impact to the Arrow Highway/Irwindale Avenue intersection.

As indicated in the "Warehouse/Manufacturing Project, 16203-16233 Arrow Highway, City of Irwindale" (Sasaki Transportation Services, August 13, 2014), the Arrow Highway/Azusa Canyon Road intersection presently operates at LOS "F" for both AM and PM peak hours. Under the City's criteria, if a signalized intersection is operating at LOS "F" under existing or future baseline conditions and the addition of more than 50 peak-hour project-related trips contributes to the continuing operational failure at the intersection, project-specific mitigation should bring the facility back to pre-project conditions. The project does not add 50 or more project trips to the Arrow Highway/Azusa Canyon Road intersection; therefore, the impact is less than significant and no mitigation is required.

The Arrow Highway/Irwindale Avenue intersection maintains a LOS "F" during the AM peak hour but increases from an LOS "E" to LOS "F" during the PM peak hour. The project contributes more than 50 peak hour trips to this intersection; therefore, the project is considered to be part of a significant impact to the Arrow Highway/ Irwindale Avenue intersection. In recognition of this impact, the following mitigation measure is identified therein:

- ***Mitigation Measure No. 9**. Arrow Highway/Irwindale Avenue: Mitigation shall consist of adding a second westbound left-turn lane, as approved by the City Engineer. The resulting westbound approach would consist of two left-turn lanes, one through lane, and one through-right lane. The Applicant's fair-share obligation for those improvements shall represent three (3) percent of the cost for implementation, as determined by the City Engineer, which shall be paid to the City prior to the issuance of building permits.*

The provision of a second westbound left-turn lane at the Arrow Highway/Irwindale Avenue intersection will improve intersection operations to better than pre-project conditions, thereby mitigating the proposed project's identified traffic impacts.

(b) Conflict with an applicable congestion management program (CMP), including, but not limited to, level of service standards and travel demand measures, or other standards established by the CMP for designated roads or highways?	☐	☐	☒	☐

	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
See Response No. 17(a) above.				
(c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☒	☐

The proposed project does not include any aviation-related aspects and is not of sufficient size and scale to predicate any substantive change in air traffic patterns.

(d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☒	☐	☐

Although no substantial increase in hazards due to the project's proposed design features has been identified, not all the possible development concepts identified herein have been developed to the same level of detail. Because the conceptual site plan remains subject to further modification, the following mitigation measure is recommended and provide an effective response to any changes in the proposed site plan that may be made by the Applicant to address the design requirements of the site's end users.

- ***Mitigation Measure No. 10**. During site plan review, the City Engineer shall conduct a review of the proposed development plan to address any engineering and operational issues which, in the judgment of the City Engineer, require further considerations, including, but not limited to, those relating to ingress and egress, on-site turning movements, the operation of loading docks, adequacy of off-street parking, and accessibility by emergency vehicles and other service providers (e.g., trash trucks). Subject to appeal to the City Council, the City Engineer shall retain the ability to direct such design and development modifications as the City Engineer may deem necessary to adequately maintain public health and safety.*

(e) Result in inadequate emergency access?	☐	☐	☒	☐
See Response No. 17(d)) above.				
(f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☒	☐

The proposed project is subject to compliance with Section 17.66.030 (Transportation Demand and Transportation Measures) in Title 17 (Zoning) of the Municipal Code. As specified, in part, therein, non-residential development projects consisting of 100,000 square feet or more shall comply with Sections 17.66.030(B)(1)-(2) and shall provide all of the following measures: (a) a safe and convenient zone in which vanpool and carpool vehicles may delivery or board their passengers; (b) sidewalks or other designated pathways following direct and safe routes from the external pedestrian circulation system to each building in the development; (c) bus stop improvements (if deemed necessary); and (d) safe and convenient access from the external circulation system to bicycle parking facilities to be located on the project site. Compliance with existing statutes, regulations, and standards does not constitute mitigation under CEQA.

Foothill Transit presently provides bus services along both Arrow Highway and Irwindale Avenue. Foothill's Route 492 includes an existing bus stop in front of Arrow Automotive (15233 Arrow Highway, Irwindale).

	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact

(Continued)

Because improvements are confined to the project site, implementation will neither conflict with nor impede available public transportation. Proposed improvements to the Arrow Highway/Azusa Canyon Road intersection (including the Applicant's payment of a fair-share contribution to those improvements) will enhance circulation through and public safety at that intersection.

18.0 UTILITIES AND SERVICE SYSTEMS

Would the project:

(a) Exceed wastewater treatment requirements of the Los Angeles Regional Water Quality Control Board?	☐	☐	☒	☐

The Sanitation Districts of Los Angeles County (Districts) provides wastewater collection and treatment in the general project area. The project site is located within the District 22 service area. The existing on-site uses presently discharge to the public sewer system. The proposed project will continue to discharge to that system either via the existing connection or through a modification thereto.

As stipulated in Section 301 of the County's Wastewater Ordinance, no party "shall construct or cause to be constructed, or alter or cause to be altered, any public sewer, lateral sewer, house connection or industrial connection sewer over six (6) inches in diameter, wastewater pumping plant, wastewater treatment plant, or other sewerage facility within the Districts where existing or proposed wastewater flows will discharge directly or indirectly to facilities of the Districts without first obtaining approval of sewerage construction plans from the Chief Engineer. . .The applicant shall submit to the Chief Engineer for approval, construction plans and such specifications and other details as required to describe fully a proposed sewerage facility."

Under Section 302 therein: "Any person desiring to connect a sewer six (6) inches or smaller in diameter directly to a trunk sewer of the Districts shall make written application to the Chief Engineer on a Districts' Trunk Sewer Connection Permit application form. The applicant shall complete the form and furnish such additional information as required by the Chief Engineer to substantiate that the proposed work or use will comply with the provisions of this Ordinance. A Trunk Sewer Connection Permit will not be issued unless the applicant has first obtained approval from the local sewer agency in the area in which the property is located. A Trunk Sewer Connection Permit will not be issued for any sewer which will convey industrial wastewater unless the discharger has first obtained a Districts' Permit for Industrial Wastewater Discharge."

Under Section 305 of the County's Wastewater Ordinance: "No person shall discharge or cause to be discharged any contaminated or uncontaminated rainwater, water used in fighting fires, stormwater, groundwater, artesian well water, street drainage, yard drainage, water from yard fountains, ponds or lawn sprays into any sewerage facility which directly or indirectly discharges to facilities owned by the Districts, except where prior approval for such discharge of water is given by the Chief Engineer. Approved discharges shall be considered industrial wastewater discharges under this Ordinance." In accordance with Section 401 therein: "Except as hereafter provided, no person shall discharge or cause to be discharged any industrial wastewaters directly or indirectly to the sewerage facilities owned by the Districts without first obtaining a Districts' Permit for Industrial Wastewater Discharge (Permit). A Districts' Permit shall be obtained prior to commencement of any construction of new or modified facilities which will discharge industrial wastewater to the sewer. A separate Permit shall be required for each industrial wastewater connection to a public sewer discharging directly or indirectly to the Districts' sewerage system."

	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact

(Continued)

No industrial wastewater discharge permit will be issued by the Districts unless the proposed project fully complies with all applicable water quality standards and permit requirements. Compliance with existing statutes, regulations, and standards does not constitute mitigation under CEQA.

Ministerial projects involve the use of set standards or objective measurements to evaluate the feasibility of granting an approval. Such projects do not require discretionary or subjective judgment on the part of the decision-making body concerning whether or how a project should be carried out (e.g., approval is subject to a set standards). Ministerial projects are not subject to CEQA. Ministerial projects include, but are not limited to, issuance of building, plumbing, electrical, and other miscellaneous permits under the provisions of the uniform codes; issuance of a demolition permit for a structure that is not a designated historic building or designated a contributing building within the historic district; grading permits; approval of individual utility service connections and disconnections; and issuance of industrial wastewater discharge permits.

(b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐

The design capacities of the Districts' wastewater treatment plants are based on population forecasts contained in Southern California Association of Government's (SCAG) "Regional Comprehensive Plan and Guide" (RCPG). The RCPG is part of the "Air Quality Management Plan" (AQMP). The AQMP and RCPG are jointly prepared by the SCAQMD and SCAG as a requirement of the federal Clean Air Act (CAA).

In order to conform to the AQMP, all expansions of Districts' facilities must be sized and service phased in a manner that ensures consistency with the "Growth Management Element" (GME) of the RCPG. As prepared by SCAG, the GME contains a regional forecast for the Counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. Specific policies in the RCPG that deal with the management of growth are incorporated into the AQMP's strategies to improve air quality in the South Coast Air Basin. The available capacity of the Districts' treatment facilities is assumed to be limited to those levels associated with approved growth identified in the RCPG.

Projects that are consistent with local general plans are, therefore, adequately accommodated by the Districts' wastewater treatment facilities. Conversely, projects that are not consistent with the existing general plan and which would generate wastewater quantities in excess of those levels that could otherwise be generated based on allowable land uses may not be adequately accommodated by Districts' facilities. If deemed consistent, the Districts' facilities would be deemed adequate to accommodate project-related demands.

(c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☒	☐	☐

As illustrated in Figure 3 (Alternative Site Plan No. 1 – Single-Building Plan), construction of a single-building option will necessitate the relocation of an existing storm drain (SD) easement (identified as a component of the Los Angeles County Flood Control Districts' Arrowdale Drain) that traverses the project site (APN 8619-010-907) in a north-south direction. Based on building placement and driveway positioning, encroachment into that storm drain easement is avoided under the 4-building and 5-building site plans.

(Continued)

Storm drain connections to and/or construction activities encroaching into a Los Angeles County Flood Control District easement requires a County permit. Issuance of a storm drain connection permit, including a water quality agreement, from the LACFCD constitutes a ministerial action and is not subject to CEQA. However, under a single-building option, the existing easement may need to be vacated and a new realignment established. A construction permit may, therefore, be required from the LACFCD to allow encroachment onto and alterations to an existing LACFCD facility and right-of-way. In the event that a construction permit is required, the following mitigation measure is recommenced and, when implemented, would reduce potential impacts to a less-than-significant level:

- ***Mitigation Measure No. 11**. In the event that the proposed project encroaches into the existing Los Angeles County Flood Control District (LACFCD) right-of-way for the Arrowdale Drain or for any other LACFCD storm drain facility and requires a relocation or other modification thereof, prior to the issuance of a grading permit by the City, the Applicant shall deliver to the City Engineer documentation evidencing the Applicant's receipt of any and all permits as may be required by or from the County of Los Angeles with regards to that encroachment, realignment, or other modification, including evidence of compliance with any permit conditions established therein.*

As stipulated in LARWQCB Order No. R4-2012-0175 (Waste Discharge Requirements for Municipal Separate Storm Sewer System Discharges within the Coastal Watersheds of Los Angeles County), each Permittee shall require all new qualifying development projects to control pollutants, pollutant loads, and runoff volume emanating from the project site by: (1) minimizing the impervious surface area; and (2) controlling runoff from impervious surfaces through infiltration, bioretention, and/or rainfall harvest and use. Each Permittee shall require the project to retain on-site the Stormwater Quality Design Volume (SWQDv), defined as the runoff from: (a) the 0.75-inch, 24-hour rain event or (b) the 85th percentile, 24-hour rain event, as determined from the Los Angeles County 85th percentile precipitation isohyetal map, whichever is greater. Compliance with the provisions of Order No. R4-2012-0175 will ensure that impacts to existing storm drain facilities are less than significant.

See Response Nos. 10(a)-(b) above.

(d) Have sufficient reliable water supplies available to serve the project from existing entitlements and resources or are new or expanded entitlements needed?	☐	☐	☒	☐

The project site is presently served by the Valley County Water District (VCWD). As indicated in the VCWD's "2010 Urban Water Management Plan, Volume I – Report" (June 2011) (2010 UWMP), the VCWD's service area includes a total of 5,935 acres. The City accounts for 49 percent of the service area but only 5 percent of the VCWD service connections. As indicated therein: "VCWD is capable of meeting all demand scenarios it is projected to face during the planning horizon of this UWMP with its current supply portfolio including normal year, single dry year and multiple dry year supply and demand conditions" (2010 UWMP, p. 8).

(e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐

	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
See Response Nos. 10(a)-(b) above.				
(f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐

A number of landfills and transfer stations exist within the County. Excluding inert-only landfills (e.g., Nu-Way Arrow Land Reclamation), the nearest mixed waste landfills to the project site include, but may not be limited to: (1) Waste Management Inc.'s Azusa Land Reclamation Co. Landfill (1211 West Gladstone, Azusa 91702); and (2) the County Sanitation Districts of Los Angeles County's Scholl Canyon Landfill (3001 Scholl Canyon, Glendale 91342). The Scholl Canyon Landfill has an estimated closing date of 2030.

The County has determined that existing landfills are sufficient to maintain a minimum 15 years' identified disposal capacity in conformance with AB 939 (Integrated Solid Waste Management Act of 1989) (Source: County of Los Angeles, Draft Environmental Impact Report – Los Angeles County General Plan Update, SCH No. 2011081042, June 2014).

(g) Comply with federal, State, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

The City has no information to suggest and no aspect of the project would support the inference that the proposed development will be constructed and operated in a manner which was not in strict compliance with all applicable federal, State, and local statute and regulations relating to solid waste.

(h) Create energy utility (electricity, natural gas, propane) system capacity problems, or result in the construction of new energy facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐

Electrical and natural gas service to the project site is presently provided by the Southern California Edison and Southern California Gas Company, respectively. Both regulated utilities have the ability to increase services and expand existing supplies in accordance to the service needs of their customers.

19.0 MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
(a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐

As indicated in this analysis, the proposed project' does not have the potential to degrade the quality of the environment, substantially reduce the habitat of fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California's history or prehistory.

(b) Does the project have the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals?	☐	☐	☒	☐

As indicated in this analysis, the proposed project does not have the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals.

(c) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐

As indicated in this analysis, the proposed project does not have the potential to produce impacts that are individually limited but cumulative considerable.

(d) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

As indicated in this analysis, the proposed project's does not have the potential to produce environmental effects causing substantial adverse effects on human beings, either directly or indirectly.

SOURCES CITED:

- American Society of Testing and Materials, ASTM E1527-13: Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, 2013.
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- California Department of Conservation, Seismic Hazard Zone Report for the Baldwin Park 7.5-Minute Quadrangle, Los Angeles, County, California,1998.
- California Department of Water Resources, Bulletin 17-93, Dams within Jurisdiction of the State of California, 1993.
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- City of Irwindale (Emergency Planning Consultants), City of Irwindale 2012 Hazard Mitigation Plan, February 11, 2013, adopted February 27, 2013.
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- County of Los Angeles, Hydrology Manual, Department of Public Works, 2006.
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- Los Angeles County Flood Control District, Construction Division, Permits and Subdivisions Section, Guidelines for Connection Permits, revised January 2007.
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- Regional Water Quality Control Board, Los Angeles Region, Water Quality Control Plan, Los Angeles Region, 1994.
- Southern California Association of Governments (The Natelson Company), Employment Density Study Summary Report, October 31, 2001.
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- Valley County Water District, 2010 Urban Water Management Plan, Volume I – Report, June 2011.

Appendix A

Arrow Highway Business Park Draft Mitigation Reporting and Monitoring Program

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Appendix A

ARROW HIGHWAY BUSINESS PARK

MITIGATION REPORTING AND MONITORING PROGRAM

No.	Mitigation Measure	Compliance Verification	Mitigation Milestone
	Air Quality		
1	Option No. 1 - Painting and surface coating shall be limited to an aggregate area of no more than 6,435 square feet per day during any phase of construction; or Option No. 2 - Paints and surface coatings shall be limited to no more than 121 milligrams per liter of volatile organic compound (VOC) content.	City Engineer	Building Permit
2	Daily site watering during earthmoving activities shall be increased from the requisite twice to no less than three times and all dozers (or equivalent pieces) used in earth movement shall be equipped with no less than Level 1 diesel particulate filters.	City Engineer	Grading Permit
	Hazards and Hazardous Materials		
3	The Applicant shall demonstrate to the satisfaction of the City Engineer that the following recognized environmental conditions described in the "Phase I Environmental Assessment: 16203-16233 Arrow Highway, Irwindale, California 91706" (SCS Engineers, July 3, 2014) have been adequately addressed and any public health and safety issues associated therewith have either been eliminated or reduced to a less-than-significant level: (1) the soil stockpile located at 16203 Arrow Highway has been sampled in accordance with accepted industry standards in order to characterize the material, determine its composition, and take appropriate actions; (2) identify and conduct samples of any industrial wastes located in all on-site septic tanks; (3) operating under the oversight of the Los Angeles County Department of Public Works (LACDPW), undertake the removal of the on-site clarifier; and (4) either retrieve the analytical laboratory report for soil vapor data collected at 16233 Arrow Highway in 2004 or conduct new sampling in order to determine if volatile organic compounds (VOCs) are present and, if present, evaluate any associated health risks.	City Engineer	Building Permit
4	Prior to the demolition of any pre-1981 buildings or structures located on the project site, a pre-demolition survey will be conducted to the satisfaction of the Community Development Director to determine the potential presence of asbestos-containing materials (ACMs) and/or asbestos-containing construction materials (ACCMs) in those existing buildings and structures to be demolished. If ACMs and/or ACCMs are determined to be present in those buildings and structures to be demolished, all such materials shall be removed in accordance with acceptable engineering methods and work practices by a licensed asbestos abatement contractor prior to demolition. The process shall be designed and monitored by a California Certified Asbestos Consultant and an abatement and monitoring plan shall be developed and submitted for review and approval by the appropriate regulatory agencies.	Community Development Director	Demolition Permit
5	Prior to the demolition of any pre-1978 buildings or structures located on the project site, a pre-demolition survey will be conducted to the satisfaction of the Community Development Director to determine the potential presence of lead-based paint (LBP) in those existing buildings and structures to be demolished. Should LBP be identified, standard handling and disposal practices shall be implemented pursuant to applicable Occupational Safety and Health Administration (OSHA) standards.	Community Development Director	Demolition Permit

No.	Mitigation Measure	Compliance Verification	Mitigation Milestone
	Hazards and Hazardous Materials (Continued)		
6	Prior to the issuance of any building permits, in accordance with Los Angeles County Fire Department (LACFD) procedures and requirements, the Applicant shall submit development and related plans to the LACFD's Fire Prevention Bureau for review and, when deemed acceptable, the LACFD shall approve or conditionally approve those plans as submitted or as subsequently modified. Any design recommendations formulated by the LACFD for the purpose of enhancing fire protection and/or public safety shall be incorporated into the project's final design and development plans and shall constitute compliance obligations with regards to the proposed project.	City Engineer	Building Permit
	Noise		
7	Option No. 1. No truck traffic shall be allowed on the east side of the facility, signage to that effect shall be posted on the project site, and site operators shall enforce that restriction; or Option No. 2. The Applicant shall construct a sound wall along the eastern perimeter with a height of no less than 12 feet and no truck traffic shall be allowed along the east side of the structure between the hours of 10:00 PM and 7:00 AM.	City Engineer	Building Permit
8	In order to reduce construction noise impacts to the maximum extent feasible, the following actions shall be taken during the project's construction: (1) The construction contractor shall schedule all construction activities, deliveries, and haul trucks during the daytime hours of 7:00 AM to 7:00 PM Monday through Saturday; (2) All construction equipment shall be properly maintained and tuned to minimize noise; (3) All equipment shall be fitted with properly operating mufflers and air intake silencers no less efficient than those originally installed by the manufacturer; (4) All stationary noise sources (e.g., generators and compressors) shall be located as far from residential receptors as feasible; (5) Sign shall be posted on the project site, clearly visible from the public right-of-way, providing contact information (e.g., name and telephone number of the construction contractor) in the event of a noise complaint, and (6) Construction shall be subject to any and all additional provisions as may be set forth by the City Engineer.	City Engineer	Building Permit
	Transportation / Traffic		
9	Arrow Highway/Irwindale Avenue: Mitigation shall consist of adding a second westbound left-turn lane, as approved by the City Engineer. The resulting westbound approach would consist of two left-turn lanes, one through lane, and one through-right lane. The Applicant's fair-share obligation for those improvements shall represent three (3) percent of the cost for implementation, as determined by the City Engineer, which shall be paid to the City prior to the issuance of building permits.	City Engineer	Building Permit
10	During site plan review, the City Engineer shall conduct a review of the proposed development plan to address any engineering and operational issues which, in the judgment of the City Engineer, require further considerations, including, but not necessarily limited to, those relating to ingress and egress, on-site turning movements, the operation of loading docks, adequacy of off-street parking, and accessibility by emergency vehicles and other service providers (e.g., trash trucks). Subject to appeal to the City Council, the City Engineer shall retain the ability to direct such design and development modifications as the City Engineer may deem necessary to adequately maintain public health and safety.	City Engineer	Site Plan

No.	Mitigation Measure	Compliance Verification	Mitigation Milestone
	Utilities and Service Systems		
11	In the event that the proposed project encroaches into the existing Los Angeles County Flood Control District (LACFCD) right-of-way for the Arrowdale Drain or for any other LACFCD storm drain facility and requires a relocation or other modification thereof, prior to the issuance of a grading permit by the City, the Applicant shall deliver to the City Engineer documentation evidencing the Applicant's receipt of any and all permits as may be required by or from the County of Los Angeles with regards to that encroachment, realignment, or other modification, including evidence of compliance with any permit conditions established therein.	City Engineer	Grading Permit

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Appendix B
Arrow Highway Business Park Referenced Figures

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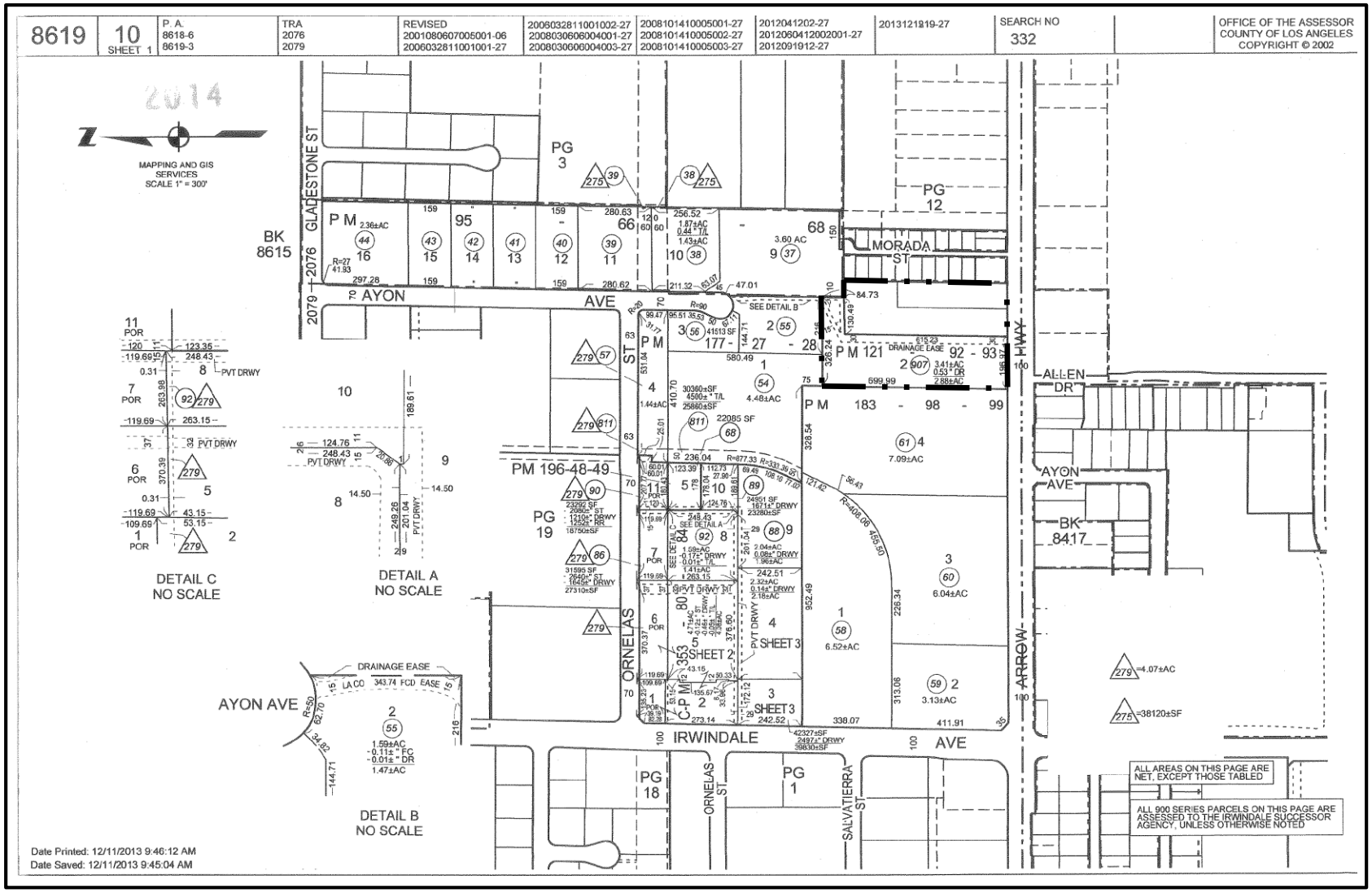


Figure 1 (1 of 2)
ASSESSOR'S PARCEL MAPS
Source: Los Angeles County

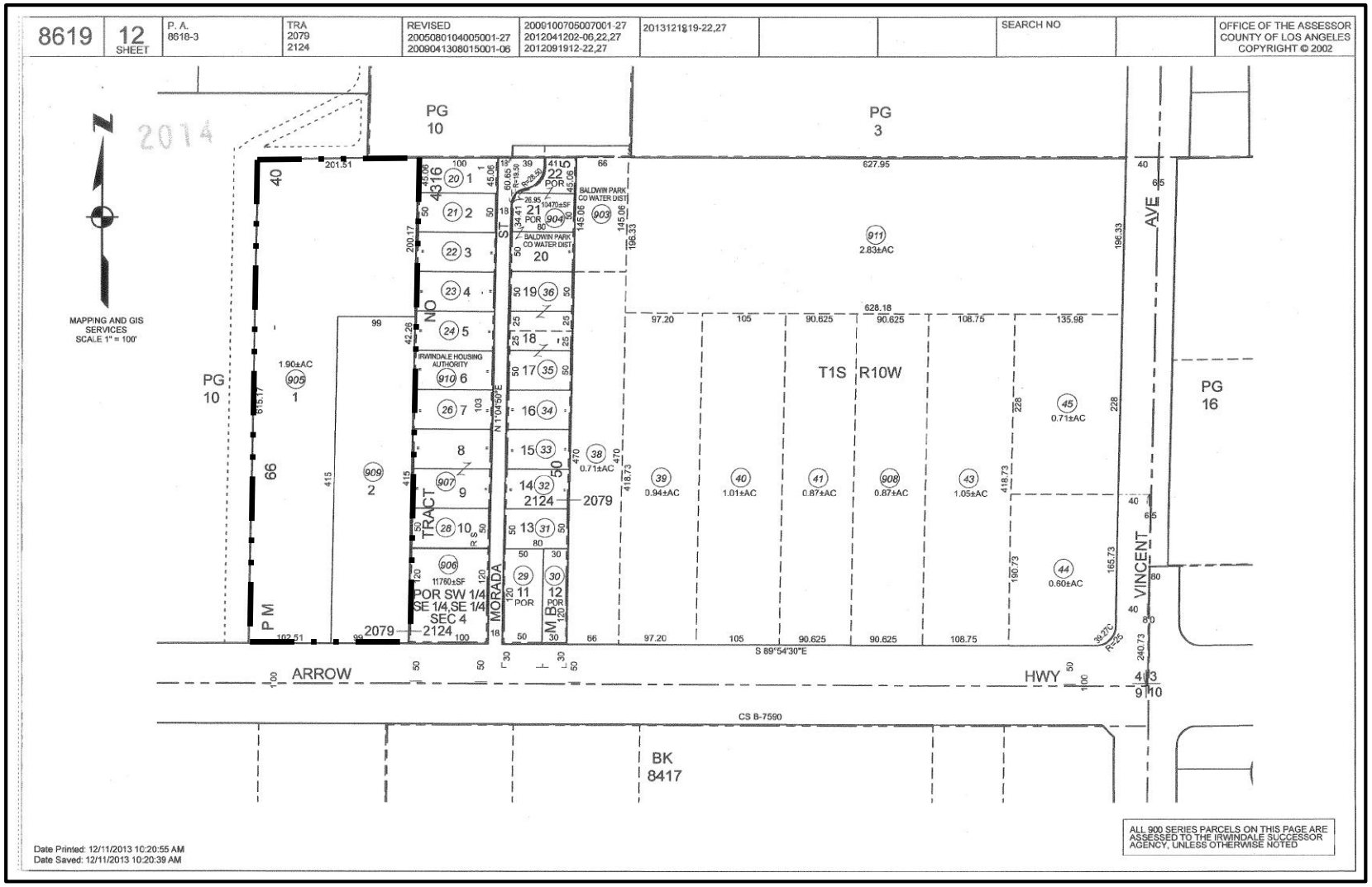


Figure 1 (2 of 2)
ASSESSOR'S PARCEL MAPS
Source: Los Angeles County

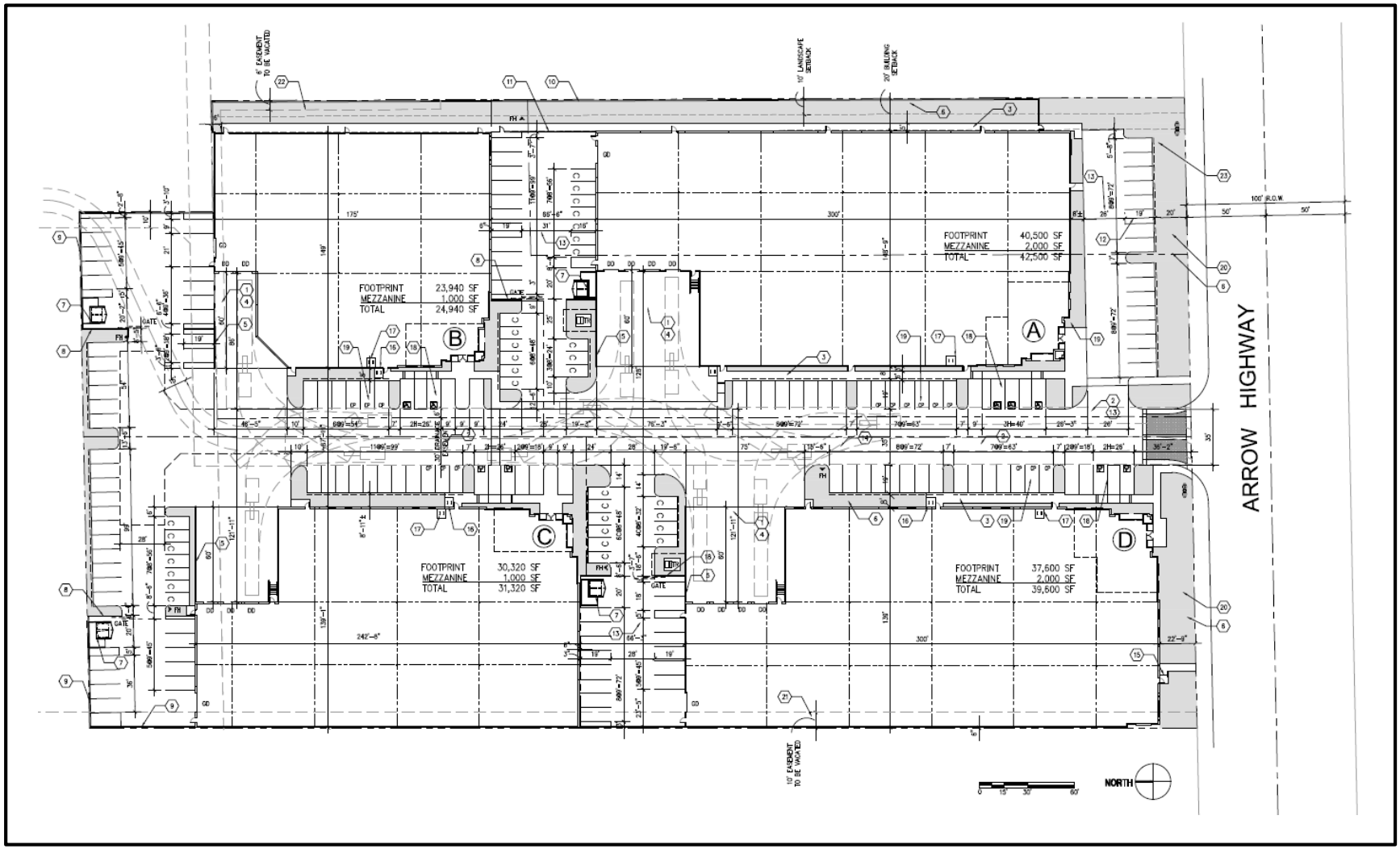


Figure 2 (1 of 2)
CONCEPTUAL SITE PLAN – 4-BUILDING PLAN
Source: Panattoni Development Company, Inc.

Site Area		Bldg A	Bldg B	Bldg C	Bldg D	Total
SF		91,198	52,225	57,703	71,092	272,218
Acres		2.09	1.20	1.32	1.63	6.25
Building Area		Bldg 1	Bldg 2	Bldg 3	Bldg 4	Total
Ground Floor Office Area		2,000	1,000	1,000	2,000	6,000
Warehouse		38,450	22,990	29,320	35,650	126,410
Sub-Total Ground Floor SF		40,450	23,990	30,320	37,650	132,410
Mezzanine (Office)		2,000	1,000	1,000	2,000	6,000
Total Building Area		42,450	24,990	31,320	39,650	**138,410**
Coverage						48.6%
FAR						50.8%
Landscape Area						
Required	10%					27,222
Provided	10.4%					28,250
Parking Requirements	Parking Ratio	Bldg A	Bldg B	Bldg C	Bldg D	Total
Office	1/350	11	6	6	11	
Warehouse Use						
0 to 20,000 sf	1/1000	20	20	20	20	
20,000 to 40,000 sf	1/2000	9	1	5	8	
40,000 sf +	1/4000	1	0	0	0	
Sub-Total		30	21	25	28	
Parking Required		**41**	**27**	**30**	**39**	**138**
Parking Provided						
HC Accessible		3	2	2	2	9
Standard (9'x19')		43	26	34	32	135
Compact (8'x15')		10	6	7	10	33
Total		**56**	**34**	**43**	**44**	**177**
Compact % (25% allowed)		18%	18%	16%	23%	19%
Parking Ratio		1.32	1.36	1.37	1.11	1.28
Truck Doors		Bldg A	Bldg B	Bldg C	Bldg D	Total
Dock Doors		4	2	3	4	13
Grade Doors		1	1	1	1	4

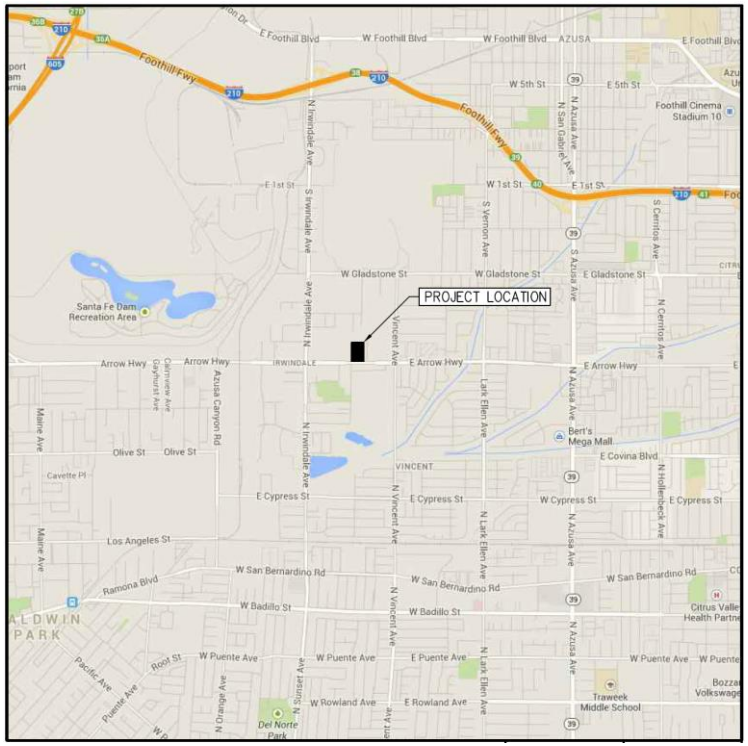


Figure 2 (2 of 2)
CONCEPTUAL SITE PLAN – 4-BUILDING PLAN LAND-USE SUMMARY
Source: Panattoni Development Company, Inc.

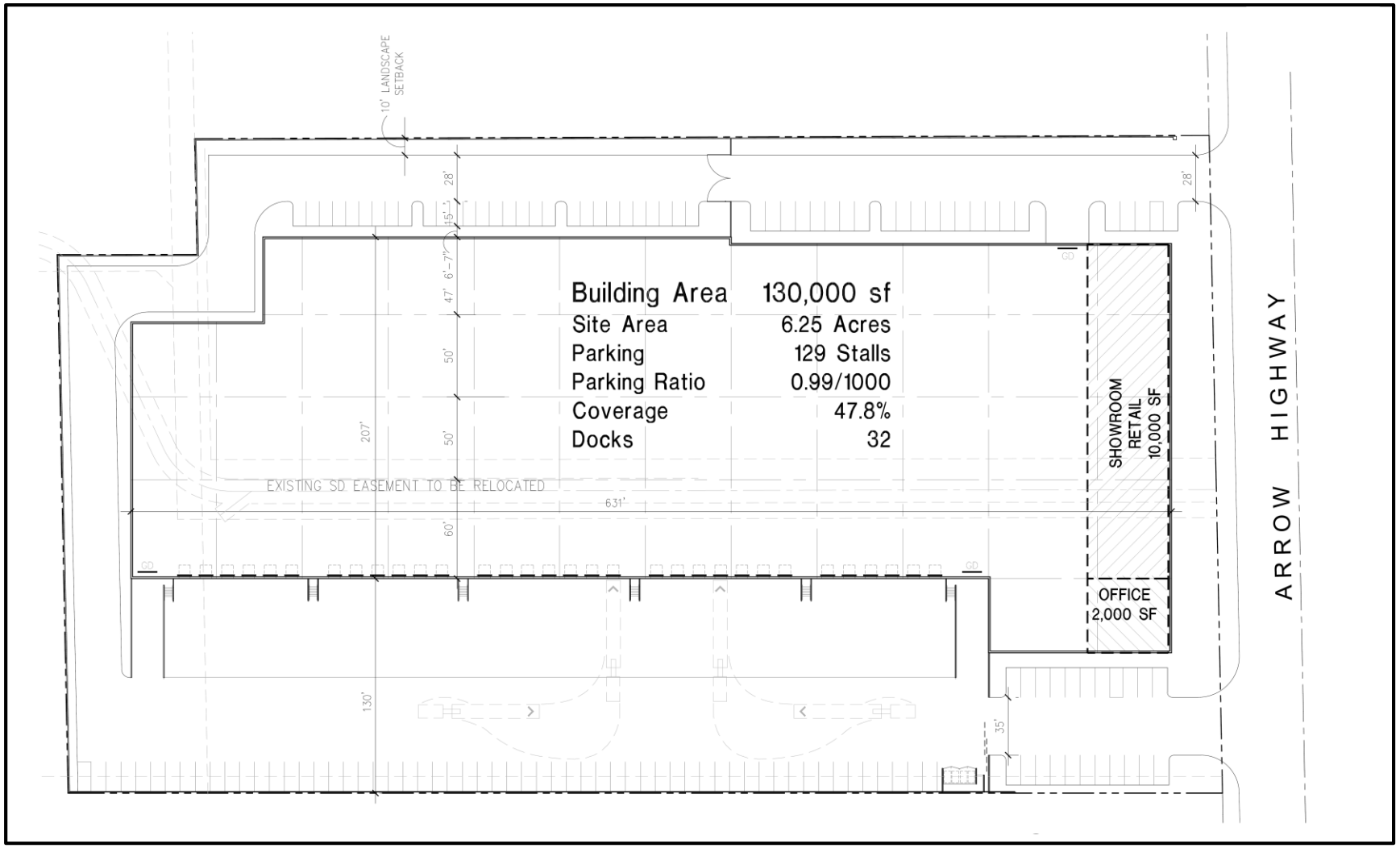


Figure 3 (1 of 2)
ALTERNATIVE SITE PLAN NO. 1
SINGLE-BUILDING PLAN
Source: Panattoni Development Company, Inc.

PROJECT TABULATIONS

Site Area				**Total**
sf		91,203		272,192
Acres		2.09		6.25
Building Area		**1st Floor**	**2nd Floor**	**Total**
Office		12,500	12,500	25,000
Manufacturing		44,000	44,000	88,000
Warehouse		20,000	0	20,000
Total Building Area		76,500	56,500	**133,000**
Coverage				28.1%
FAR				48.9%
Landscape Area				
Required	10%			27,219
Provided	12.4%			33,800
Parking Requirements	Parking Ratio			Total
Office	1/250			100
Manufacturing Use				
0 to 10,000 sf	1/350			29
10,000 to 50,000 sf	1/500			80
50,000 to 100,000 sf	1/1000			38
				147
Warehouse Use				
0 to 20,000 sf	1/1000			20
20,000 to 40,000 sf	1/2000			0
40,000 sf +	1/4000			0
Sub-Total				20
Parking Required				**267**
Parking Provided				
HC Accessible				9
Standard (9'x19')				294
Compact (8'x15')				101
Total				**404**
Compact % (25% allowed)				25%
Parking Ratio				3/1000
Truck Doors				
Dock Doors				3
Grade Doors				1

Figure 3 (2 of 2)
ALTERNATIVE SITE PLAN NO. 1
SINGLE-BUILDING PLAN
LAND-USE SUMMARY
Source: Panattoni Development Company, Inc.

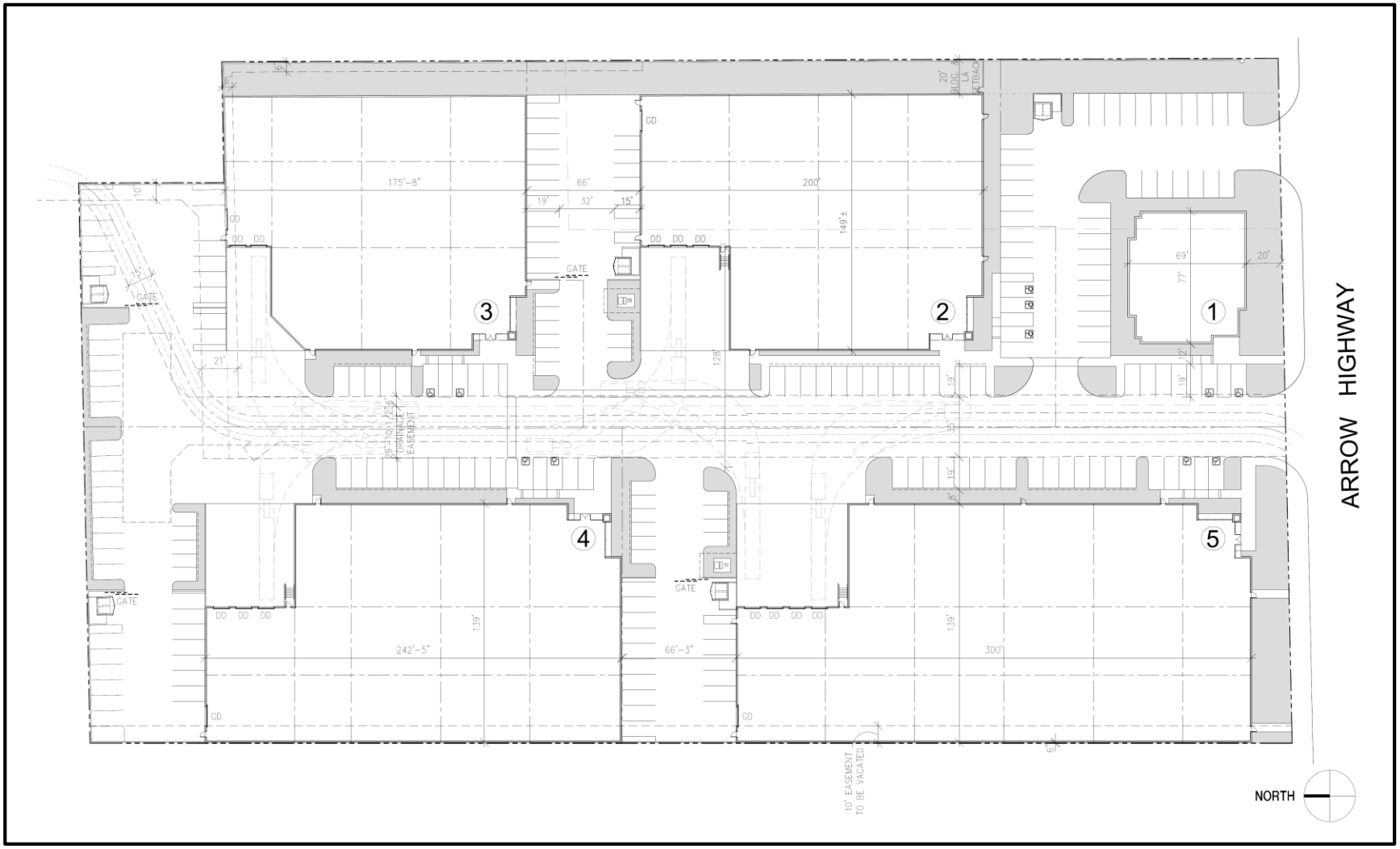


Figure 4 (1 of 2)
ALTERNATIVE SITE PLAN NO. 2
5-BUILDING PLAN
Source: Panattoni Development Company, Inc.

PROJECT TABULATIONS

Site Area		Bldg 1	Bldg 2	Bldg 3	Bldg 4	Bldg 5	Total
sf		31,360	59,844	52,198	57,382	71,409	272,193
Acres		0.72	1.37	1.20	1.32	1.64	6.25
Building Area					Bldg 3	Bldg 4	Total
Ground Floor Office Area		5,000	2,000	1,000	1,000	2,000	11,000
Warehouse		0	24,300	22,900	29,250	35,450	111,900
Sub-Total Ground Floor SF		5,000	26,300	23,900	30,250	37,450	122,900
Mezzanine (Office)		5,000	1,000	1,000	1,000	2,000	10,000
Total Building Area		10,000	27,300	24,900	31,250	39,450	**132,900**
Coverage							45.2%
FAR							48.8%
Landscape Area							
Required	10%						27,219
Provided	12.1%						32,950
Parking Requirements	Parking Ratio						Total
Office	1/250	40	12	8	8	16	
Warehouse Use							
0 to 20,000 sf	1/1000		20	20	20	20	
20,000 to 40,000 sf	1/2000		2	1	5	8	
40,000 sf +	1/4000		0	0	0	0	
Sub-Total		0	22	21	25	28	
Parking Required		**40**	**34**	**29**	**33**	**44**	**180**
Parking Provided							
HC Accessible		2	3	2	2	2	11
Standard (9'x19')		32	28	25	35	32	152
Compact (8'x15')		7	10	6	5	10	38
Total		**41**	**41**	**33**	**42**	**44**	**201**
Compact % (25% allowed)		17%	24%	18%	12%	23%	19%
Parking Ratio		4.10	1.50	1.33	1.34	1.12	1.51
Truck Doors							Total
Dock Doors		0	3	2	3	4	9
Grade Doors		0	1	1	1	1	3

Figure 4 (2 of 2)
ALTERNATIVE SITE PLAN NO. 2
5-BUILDING PLAN
LAND-USE SUMMARY
Source: Panattoni Development Company, Inc.

Land Use	ITE Code	Units	Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out
Trip Generation Rates:							
-Warehouse	150	per TSF	3.56	0.24	0.16	0.08	0.24
-Warehouse	150	per Employee	3.89	0.37	0.14	0.21	0.38
-Manufacturing	140	per TSF	3.82	0.57	0.16	0.26	0.47
-Office	710	per TSF	11.03	1.37	0.19	0.25	1.24
-High-Cube Ware/Distrib	152	per TSF	1.68	0.08	0.03	0.04	0.08
- Specialty-Shop Center	826	per TSF	44.32	0.6	0.36	1.19	1.52

Source: Trip Generation, 9th Edition; Institute of Transportation Engineers (ITE); 2012
Notes: Per ITE, warehouse & manf. uses include offices. "High-Cube" = distribution/sig. automation
"ITE Code" is per Trip Generation

Trip Ends Generated:
16203-16223 Arrow Highway (172,000 SF): Project + 4 Alternatives

Project:							
-Warehouse		20,000 SF	70	5	3	2	5
-Manufacturing		88,000 SF	340	50	14	23	41
-Office		25,000 SF	280	34	5	6	31
Subtotal			690	**89**	**22**	31	**77**
Alt. 1:							
-Manufacturing (Distribution, Automated)		133,000 SF	510	76	21	35	63
Alt. 2:							
-Warehouse		133,000SF	470	32	21	11	32
Alt. 3:							
-Warehouse (w Office)		25,000 SF	90	6	4	7	12
-Manufacturing (w Office)		108,000 SF	410	62	17	28	50
Subtotal			500	68	21	**35**	62
Alt. 4:							
- Ware/Distrib Center		120,000SF	200	10	4	5	10
- Ware/Distrib Center	or	80 Employees	310	30	11	17	30
(w/Showroom-Retail)	plus	10,000SF	440	6	4	12	15
Subtotal			**750**	36	15	29	45
Totals (Non-PCE Trip Generation)		**133,000 SF**	**750**	**89**	**22**	**35**	**77**
FINAL PCE TRIP GENERATION			**1,000**	**119**	**29**	**47**	**103**

Note: The daily & peak Trip Ends generated are rounded to the nearest 10 & 1, respectively
ITE does not define truck trip % for Manf. and % varies by specific user for Ware/Distrib
The 4th Alt.= Ware/Distrib w/ conservative retail assumptions for the showroom .
Bold trip numbers reflect the "worst case" assumptions.
Final Trip Generation values indicate a 33% increase to account for potential truck trips and yield PCE results.

Figure 5
PROJECT DESCRIPTION
COMPOSITE TRAFFIC ASSUMPTIONS
Source: Sasaki Transportation Services

Figure 6
AERIAL PHOTOGRAPH
Source: Soils Conservation Service

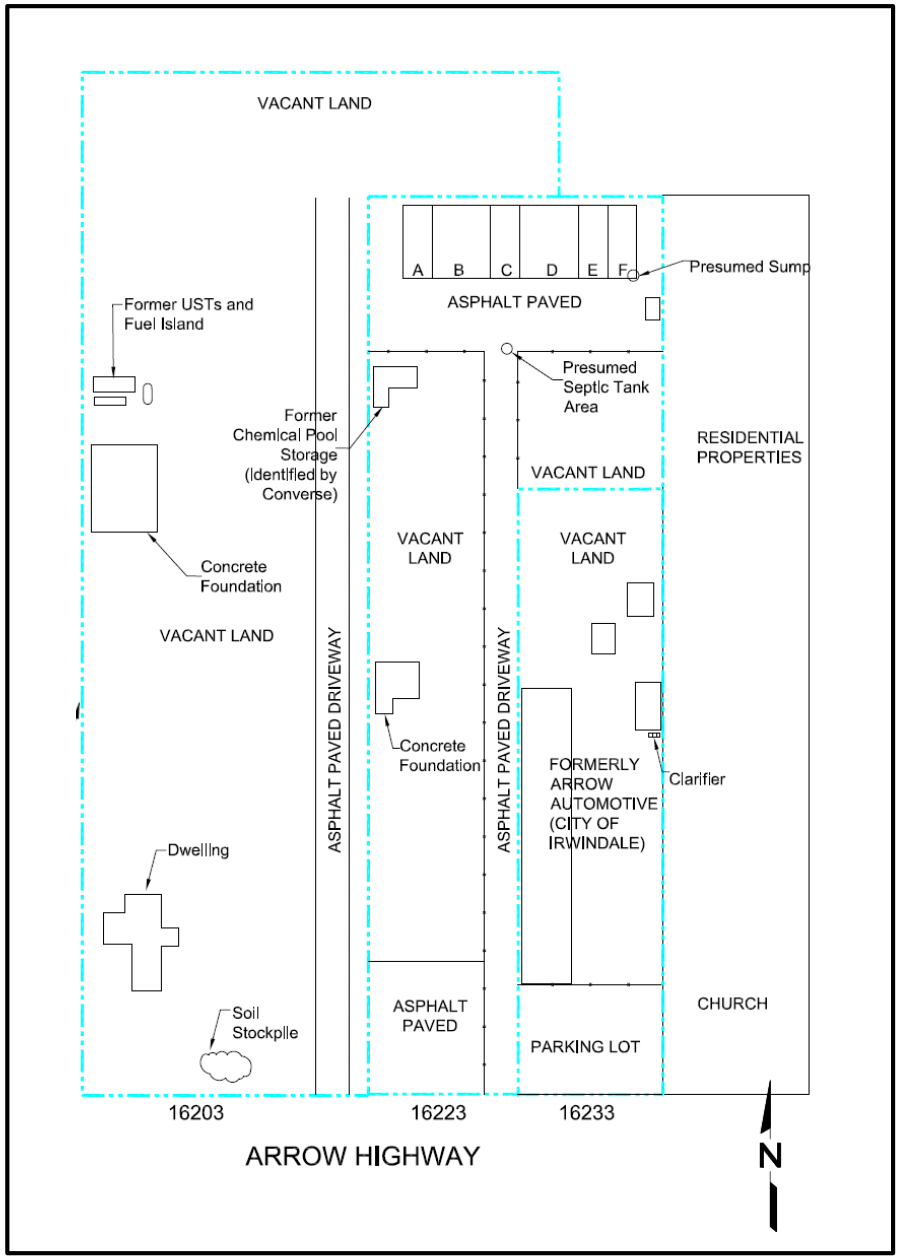
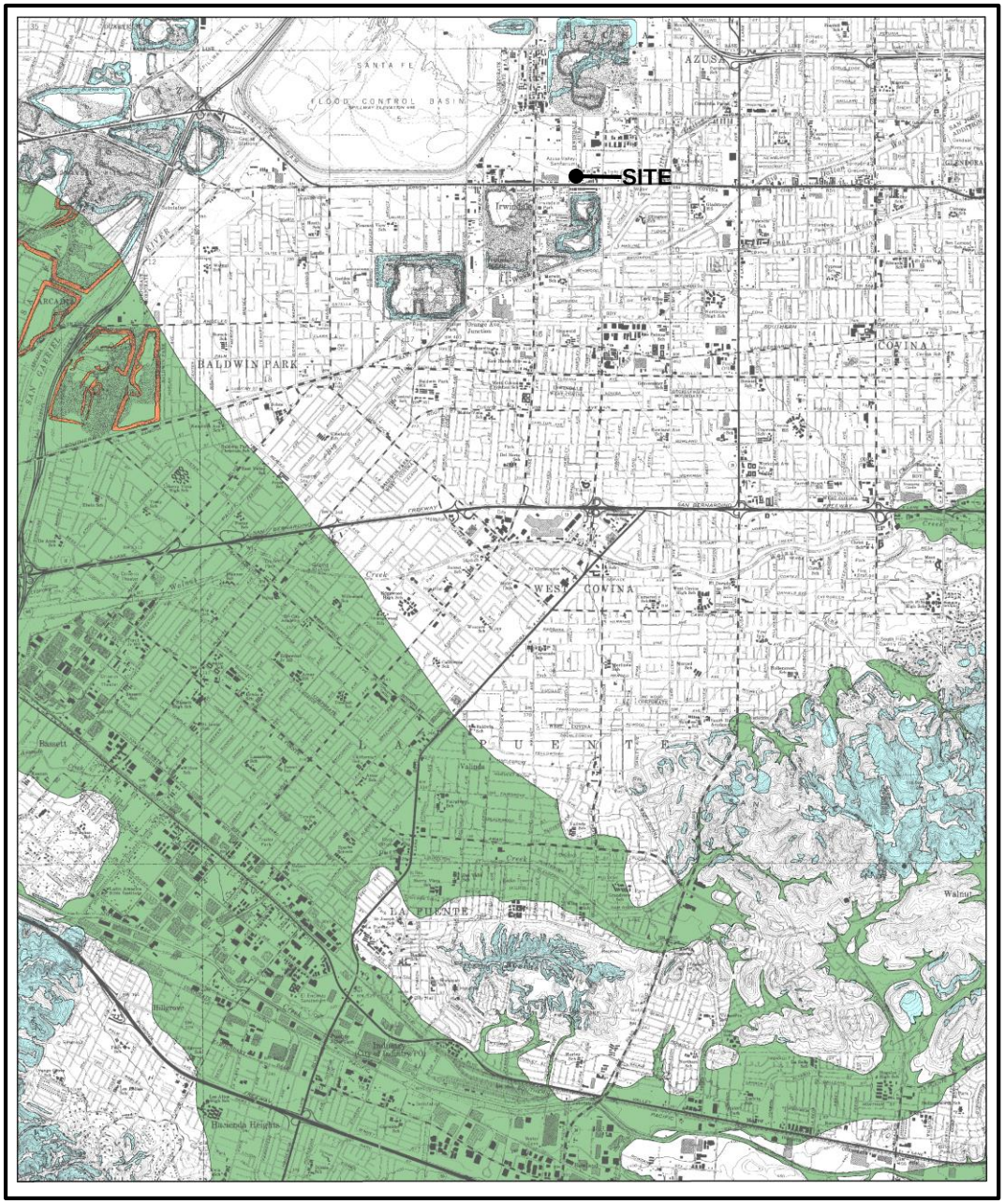


Figure 7
CURRENT SITE FEATURES
Source: SCS Engineers



MAP EXPLANATION

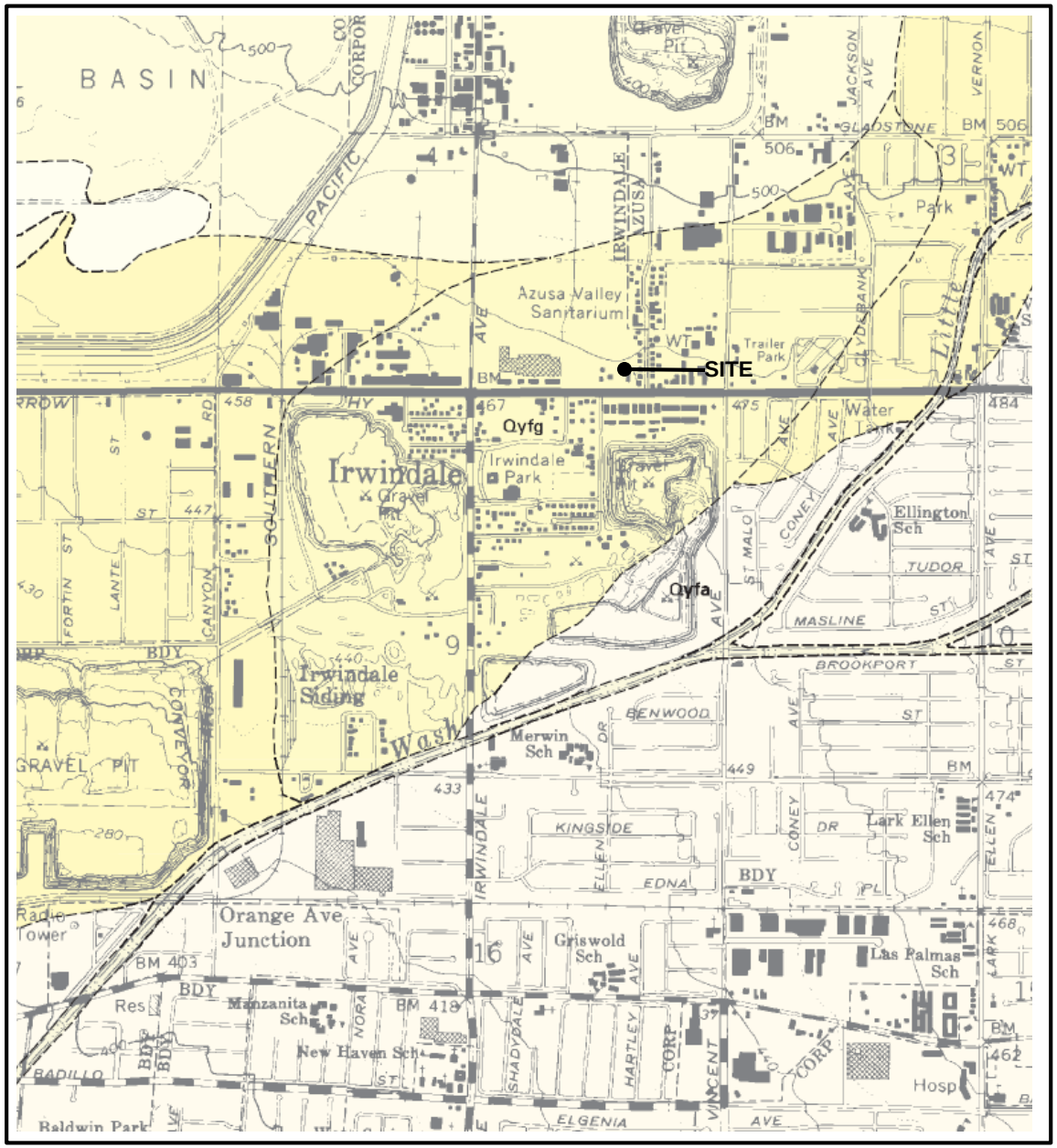
Zones of Required Investigation:

Liquefaction
Areas where historic occurrence of liquefaction, or local geological, geotechnical and groundwater conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

Earthquake-Induced Landslides
Areas where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

Overlapping Liquefaction and Earthquake-Induced Landslides
Areas that lie within zones of required investigation for both liquefaction and earthquake-induced landslides. (See above for explanation of each zone.)

Figure 8
SEISMIC HAZARD ZONES
BALDWIN PARK 7.5' QUADRANGLE (1999)
Source: California Department of Conservation



EXPLANATION OF MAP UNITS

Qw	Active channel and wash deposits, unconsolidated silt and coarser material, mostly artificially channelized; a = sand, g = gravel.
Ql	Active lacustrine deposits, unconsolidated, submerged; c = clay, s = silt, g = gravel.
Qw1	Modern river sediments prior to the artificial channelization of river, unconsolidated; a = sand, g = gravel.
Qyf	Younger (Holocene) undivided alluvial fan and valley deposits, unconsolidated; c = clay, s = silt, a = sand, g = gravel.
Qls	Landslide deposits; landslide, broken-up and weathered material; queried where existence is uncertain. It is subject to renewed slope failure.
Qof	Older (Pleistocene) undivided alluvial fan and valley deposits, moderately to well-consolidated; s = silt, a = sand, g = gravel; numbers 1 to 4 indicate relative levels of terraces with 1 being the highest and oldest.

Fernando Formation (Pliocene)

Tfu	Upper Member; massive, friable silty and pebbly sandstone, with interbedded thin beds of siltstone.
Tfuc	Upper Member; conglomerate and pebbly sandstone, interbedded with Tfu.
Tfl	Lower Member; massive silty sandstone, with interbedded pebbly sandstone and conglomerate.
Tflc	Lower Member; conglomerate and pebbly sandstone, interbedded with Tfl.

Puente Formation (late Miocene)

Tpsc	Sycamore Canyon Member; sandstone, with interbedded pebble-cobble conglomerate and sandy siltstone.
Tpscc	Sycamore Canyon Member; pebble-cobble conglomerate and pebbly sandstone, interbedded with Tpsc.
Tpy	Yorba Member; platy diatomaceous siltstone with interbeds of sandstone, limestone and marl.
Tpsq	Soquel Member; sandstone with concretions, siltstone and conglomerate.
Tpscq	Soquel Member; conglomerate and pebbly sandstone, interbedded with Tpsq.
Tpl	La Vida Member; platy siltstone contains foraminifera and fish scales, with interbeds of sandstone, conglomerate, limestone and tuff.

Figure 9
GEOLOGIC MAP OF THE BALDWIN PARK 7.5' QUADRANGLE (1997)
Source: California Department of Conservation

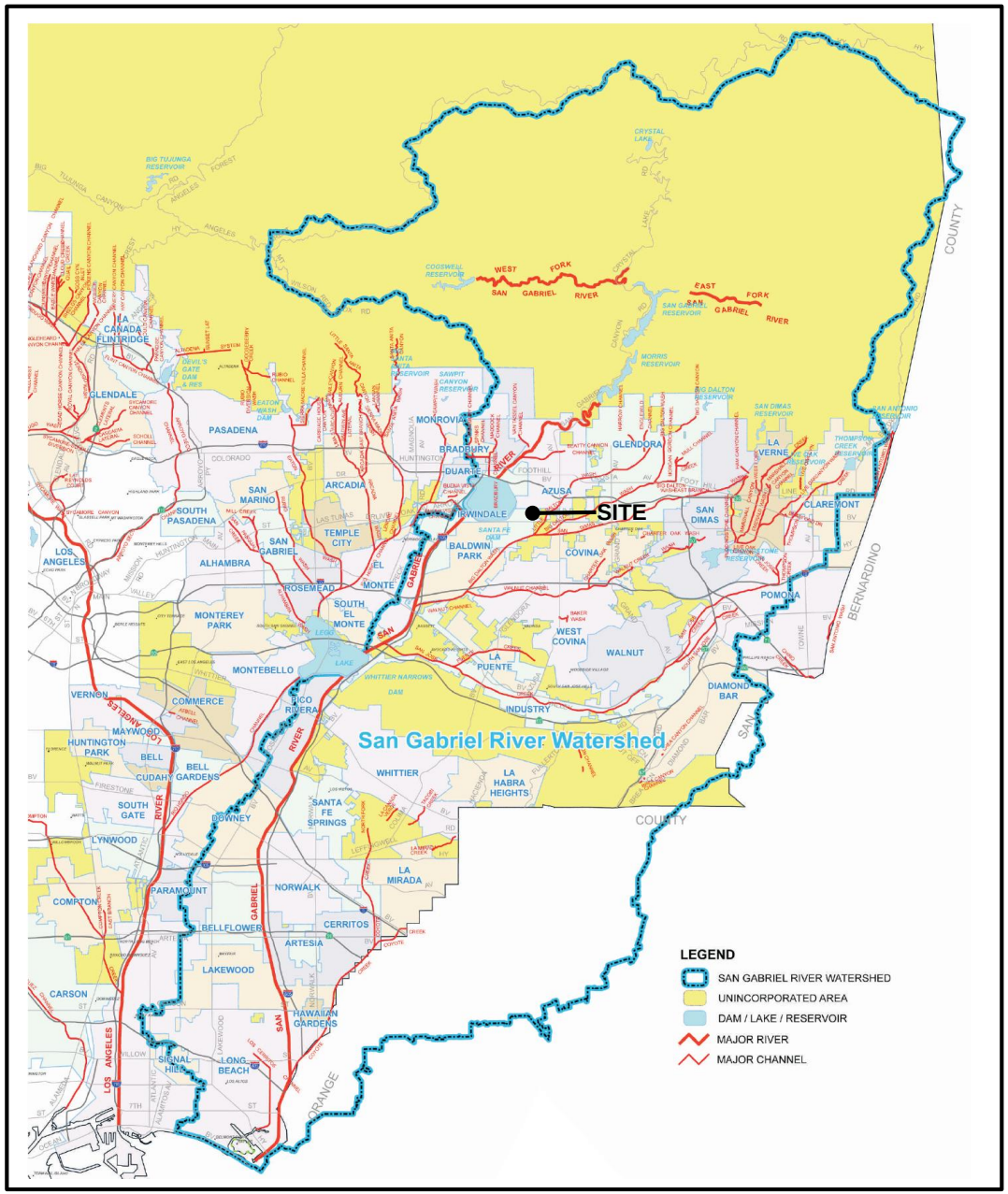


Figure 10
SAN GABRIEL RIVER WATERSHED
Source: Los Angeles County Department of Public Works

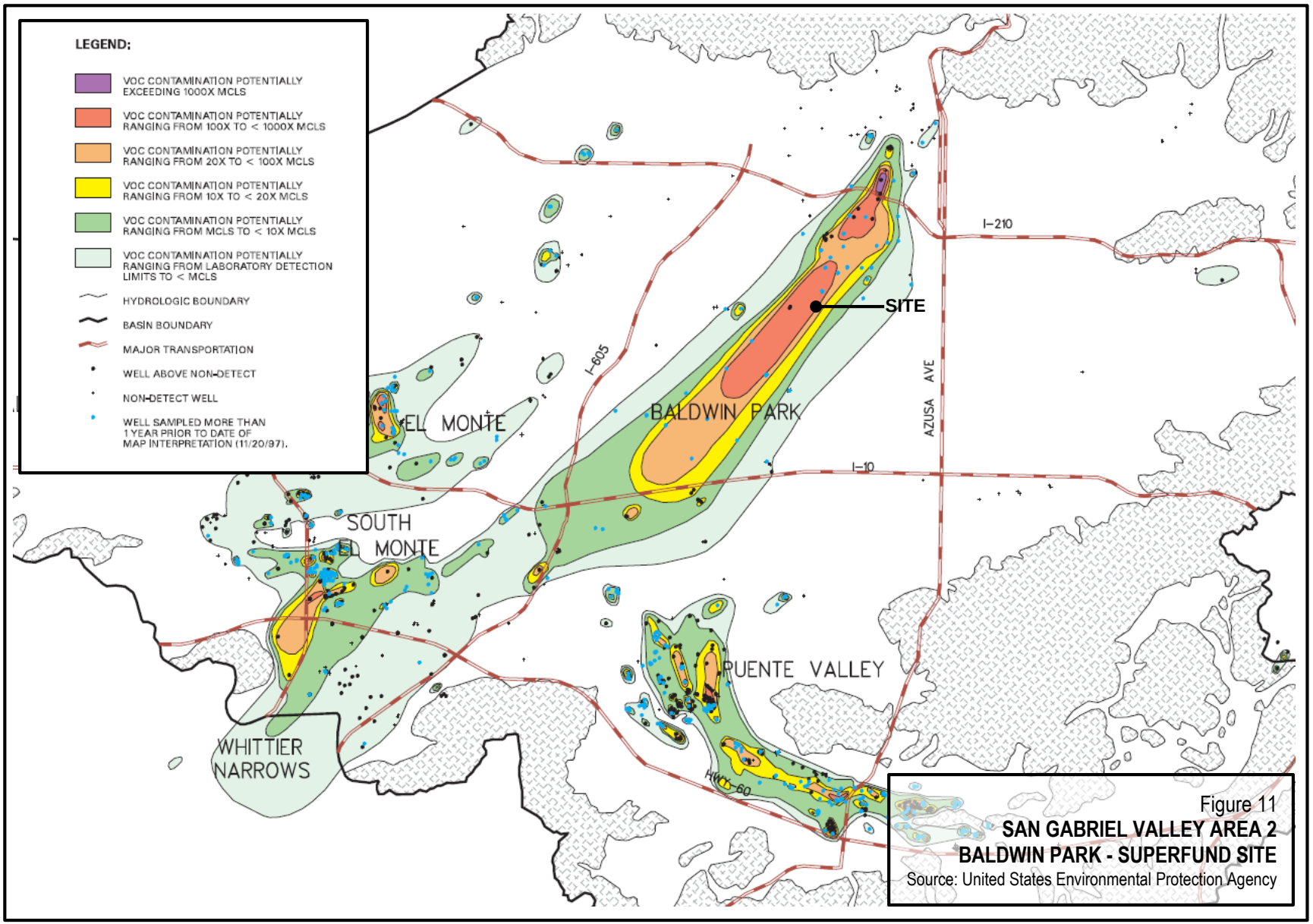


Figure 11
SAN GABRIEL VALLEY AREA 2
BALDWIN PARK - SUPERFUND SITE
Source: United States Environmental Protection Agency

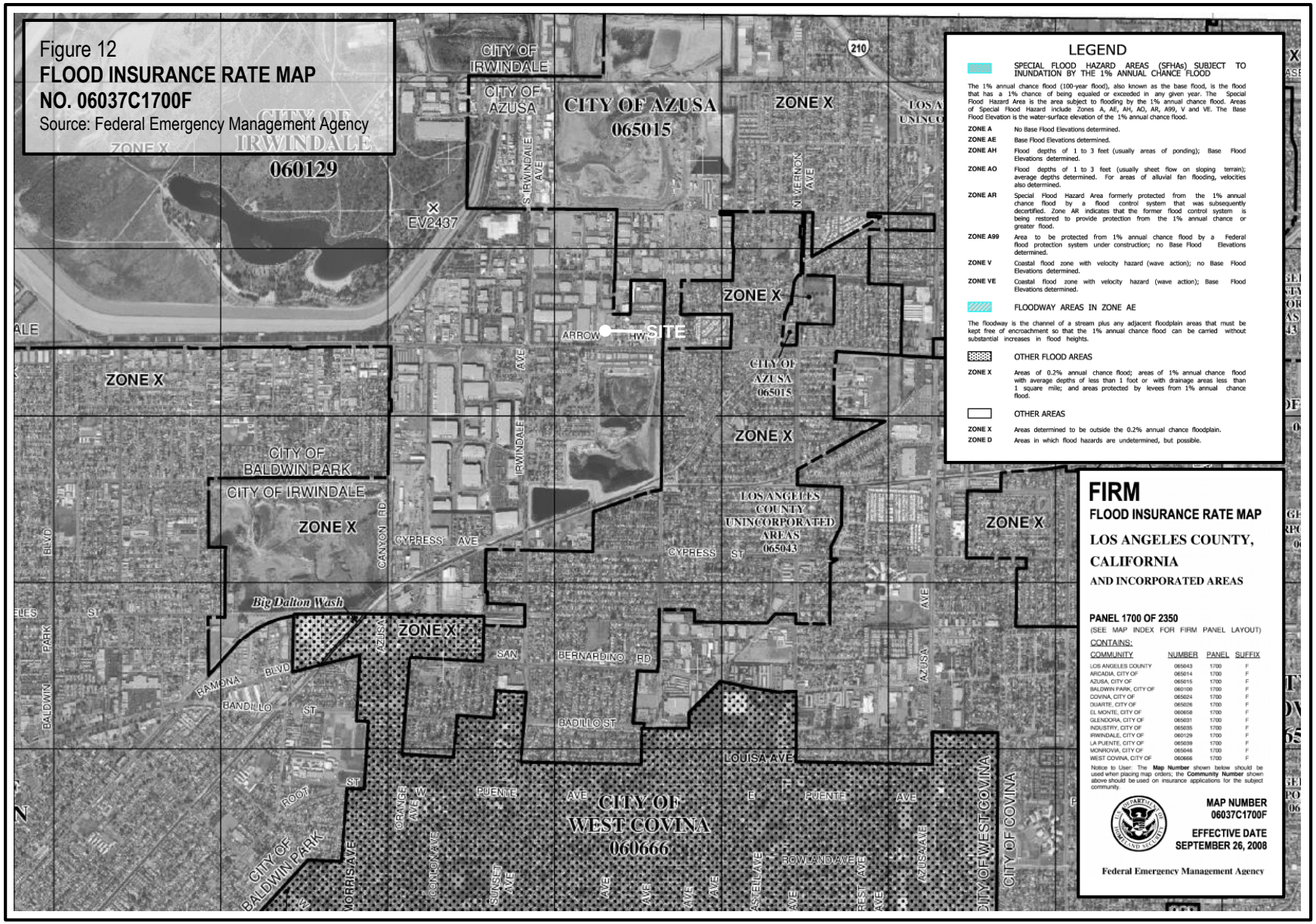


Figure 12
FLOOD INSURANCE RATE MAP
NO. 06037C1700F
Source: Federal Emergency Management Agency
CITY OF IRWINDALE
060129
CITY OF AZUSA
065015
CITY OF WEST COVINA
060666
CITY OF BALDWIN PARK
LOS ANGELES COUNTY UNINCORPORATED AREAS
065043
ZONE X
SITE
ARROW HWY
EV2437
Big Dalton Wash
LEGEND
SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD
The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.
ZONE A No Base Flood Elevations determined.
ZONE AE Base Flood Elevations determined.
ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99 Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.
FLOODWAY AREAS IN ZONE AE
The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
OTHER FLOOD AREAS
ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
OTHER AREAS
ZONE X Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D Areas in which flood hazards are undetermined, but possible.
FIRM
FLOOD INSURANCE RATE MAP
LOS ANGELES COUNTY, CALIFORNIA
AND INCORPORATED AREAS
PANEL 1700 OF 2350
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
LOS ANGELES COUNTY 065043 1700 F
ARCADIA, CITY OF 065014 1700 F
AZUSA, CITY OF 065015 1700 F
BALDWIN PARK, CITY OF 060100 1700 F
COVINA, CITY OF 065024 1700 F
DUARTE, CITY OF 065026 1700 F
EL MONTE, CITY OF 060658 1700 F
GLENDORA, CITY OF 065031 1700 F
INDUSTRY, CITY OF 065035 1700 F
IRWINDALE, CITY OF 060129 1700 F
LA PUENTE, CITY OF 065039 1700 F
MONROVIA, CITY OF 065046 1700 F
WEST COVINA, CITY OF 060666 1700 F
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.
MAP NUMBER
06037C1700F
EFFECTIVE DATE
SEPTEMBER 26, 2008
Federal Emergency Management Agency

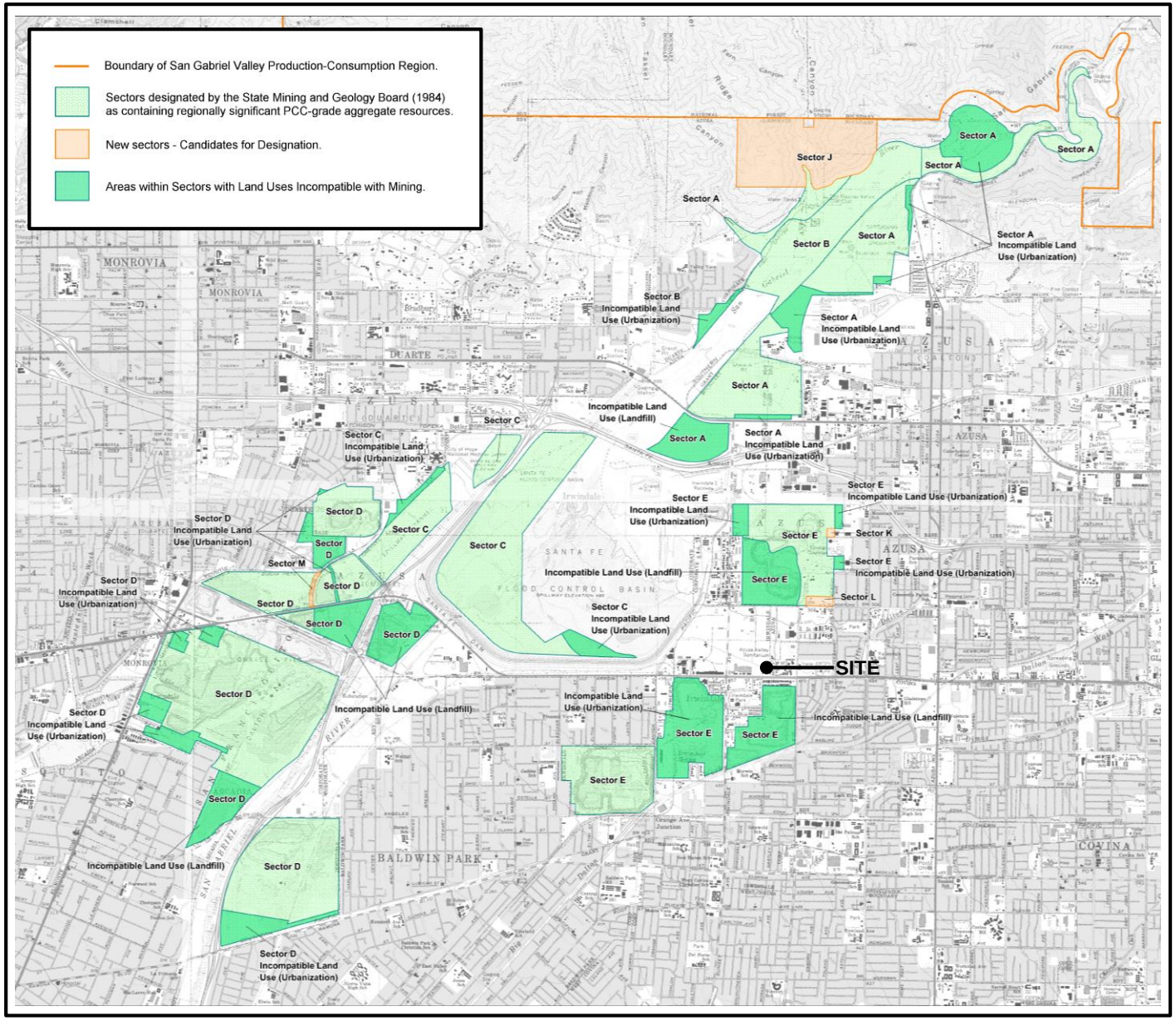


Figure 13
CANDIDATE AREAS FOR UPDATED DESIGNATION IN THE NORTHERN SAN GABRIEL PRODUCTION-CONSUMPTION REGION, LOS ANGELES COUNTY CALIFORNIA
Source: California Department of Conservation

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Appendix C

Arrow Highway Business Park
Air Quality and Greenhouse Gas Analysis

(Environmental Impact Sciences, August 2014)

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Arrow Highway Business Park
Air Quality and Greenhouse Gas Analysis

16203-16233 Arrow Highway
Irwindale, California

Prepared for:
City of Irwindale
Community Development Department
Gus Romo, Planning Director
5050 North Irwindale
Irwindale, California 91706

Prepared by:
Environmental Impact Sciences
26051 Via Concha
Mission Viejo, California 92691-5614

August 2014

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1.0 METHODOLOGY

This air quality evaluation was prepared in accordance with the requirements of the California Environmental Quality Act (CEQA) in order to determine if significant air quality impacts are likely to occur in conjunction with the type and scale of development associated with the proposed Arrow Highway Business Park project (16203-16233 Arrow Highway, Irwindale). The impact analysis contained in this report was prepared in accordance with the methodologies provided by the South Coast Air Quality Management District (SCAQMD), as included in the SCAQMD's "CEQA Air Quality Handbook" (April 1993) (Handbook) and updates included on the SCAQMD's Internet website. The analysis makes use of the California Emissions Estimator Model (CalEEMod Version 2013.2.2) urban emissions model, screening tables included in the SCAQMD's "Final Localized Significance Threshold Methodology" (June 2003), and "Sample Construction Scenarios for Projects Less than Five Acres in Size" (February 2005).

The CalEEMod model uses EMFAC2011 emissions factors for vehicle traffic and the OFFROAD2011 emissions factors for construction equipment. For analysis, the facility would become operational in 2016 following the CalEEMod "default" construction schedule.

The subsequent occupation of the site is also based on the CalEEMod model using traffic-projections presented in "Warehouse/Manufacturing Project, 16203-16233 Arrow Highway, City of Irwindale" (Sasaki Transportation Services, August 13, 2014). In accordance with the transportation analysis, the project is estimated to generate approximately 1,000 passenger car equivalent (PCE) average daily trips (ADT), with 148 produced in the morning (AM) peak hour and 150 produced in the evening (PM) peak hour on a "typical" weekday. These weekday trips are used in the calculation of the daily emissions.

The calculated emissions of the project are compared to thresholds of significance for individual projects using the SCAQMD's Handbook as well as their Internet updates. The analysis finds that all air quality emissions and localized concentrations would remain below their respective threshold values. The project is found to be consistent with the goals of applicable air quality and climate change plans and, with the application of the noted mitigation for the application of paints and coatings, no significant air quality impacts are projected.

2.0 PROJECT DESCRIPTION

The project analyzed herein constitutes the project described in the Initial Study. As indicated therein, three alternative site plans have been submitted for review and consideration by the City. All three site plans orientated loading dock activities toward the west and away from the single-family residents (located along the west side of Morada Street) and Our Lady of Guadalupe Mission Church (located at the northwesterly corner of Arrow Highway and Morada Street) to the east of the site. All design options seek to effectively utilize building orientation in a manner to minimize potential environmental impacts affecting near-site sensitive receptors.

Of the three site plans under consideration, the "1-building site plan" incorporates a travel aisle and parking area directly adjacent to the project site's eastern boundary. That configuration exposes sensitive receptors to the east of the project site to the greatest potential air quality impacts and was selected as the "worst-case" scenario for focused consideration herein. Other development alternatives would potentially result in lesser project-related exposure and might, therefore, necessitate less mitigation. The analyzed site plan is included as Figure AQ-1 (Arrow Highway Business Park – One-Building Site Plan).

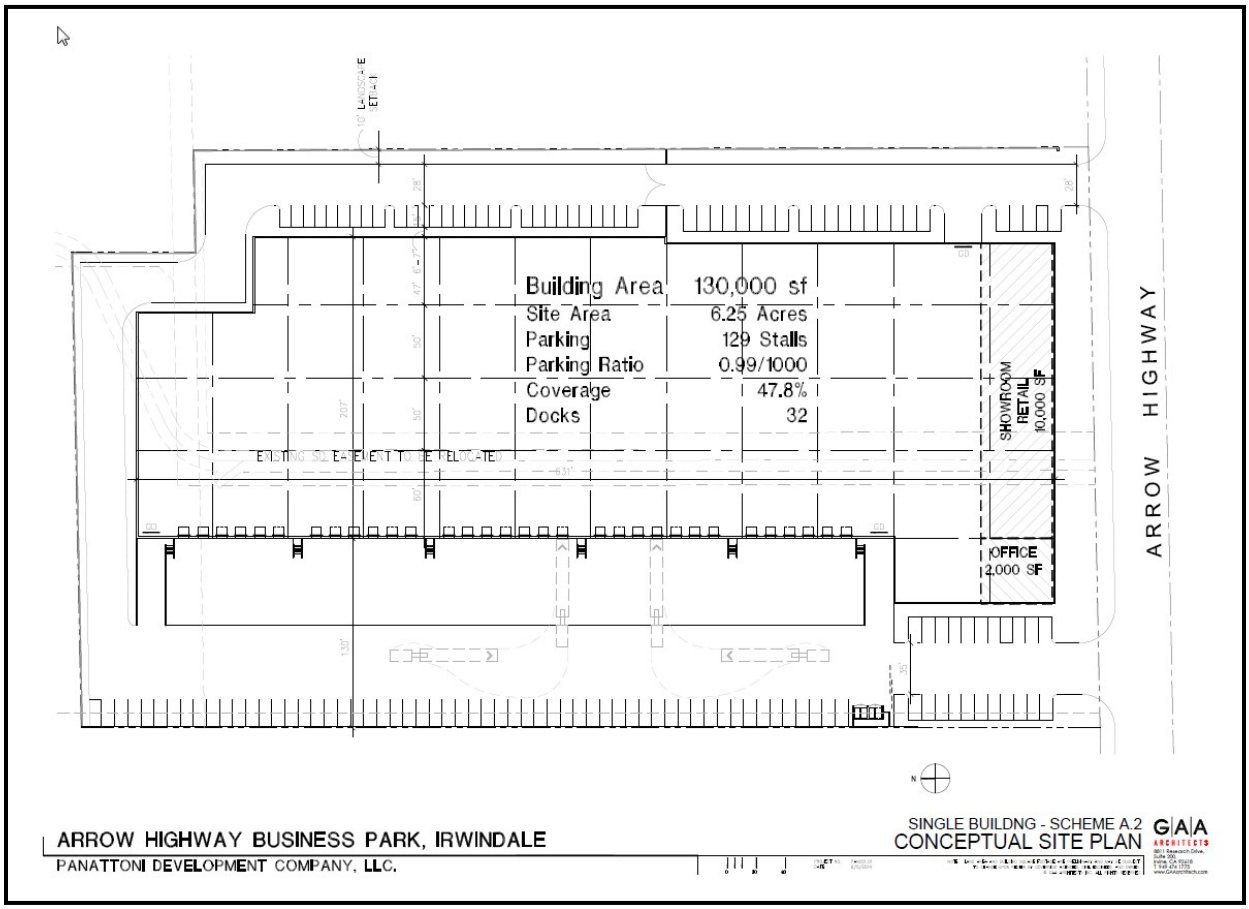

Figure AQ-1
ARROW HIGHWAY BUSINESS PARK
ONE-BUILDING SITE PLAN
Source: Shubin-Madal Realty Investors, LLC

3.0 EXISTING CONDITIONS

3.1 Climate/Meteorology

The project area lies in the South Coast Air Basin (SCAB or Basin). The SCAB includes all of Orange County as well as the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The Basin is located in a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean in the southwest quadrant with high mountains forming the remainder of the perimeter. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. This usually mild climatological pattern is infrequently interrupted by periods of extremely hot weather, winter storms, or Santa Ana winds.

The annual average temperature varies little throughout the Basin, ranging from the low to middle 60s, measured in degrees Fahrenheit (ºF). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The SCAQMD reports that the weather station located in San Gabriel shows an annual average of 64ºF. The average low is reported at 42ºF in January while the average high is 89ºF

in July and August. All areas in the Basin have recorded temperatures above 100ºF in recent years and temperatures as high as 111ºF have been recorded at the San Gabriel station to the west of the project site.

In contrast to a very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all rain falls from November through April. Summer rainfall is normally restricted to widely scattered thundershowers near the coast with slightly heavier shower activity in the east and over the mountains. Rainfall averages around 17.37 inches per year in the project area as measured in Covina to the east of the project site.

Although the Basin has a semi-arid climate, the air near the surface is typically moist because of the presence of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the Basin by offshore winds, the ocean effect is dominant. Periods of heavy fog, especially along the coast, are frequent; and low stratus clouds are a characteristic climatic feature. Annual average humidity is 70 percent at the coast and 57 percent in the east portions of the Basin.

Wind patterns across the region are characterized by easterly winds during the winter and westerly winds in the summer. Wind speed is somewhat greater during the spring months. Annually, typical winds in the project area average about 4.0 mph as measured in Azusa to the north of the project site.

Between the periods of dominant air flow, periods of air stagnation may occur, both in the morning and evening hours. Whether such a period of stagnation occurs is one of the critical determinants of air quality conditions on any given day. During the winter and fall months, surface high pressure systems over the Basin, combined with other meteorological conditions, can result in very strong, downslope Santa Ana winds. These winds normally have a duration of a few days before predominant meteorological conditions are reestablished.

In conjunction with the two characteristic wind patterns that affect the rate and orientation of horizontal pollutant transport, there are two similarly distinct types of temperature inversions that control the vertical depth through which pollutants are mixed: marine/subsidence inversion and the radiation inversion. The height of the base of the inversion at any given time is known as the “mixing height.” This mixing height can change under conditions when the top of the inversion does not change. In the project area, the combination of winds and inversions are critical determinants in leading to the highly degraded air quality in summer and the generally good air quality in the winter.

3.2 Ambient Air Quality

The following characterization of the baseline atmospheric environment includes an evaluation of the ambient air quality and applicable rules, regulations, and standards for the area. Because the project has the ability to release gaseous emissions of criteria pollutants and dust into the ambient air, it falls under the ambient air quality standards promulgated on the local, State, and federal levels.

3.2.1 Affected Environment

Topographical features that affect the transport and diffusion of pollutants in the project area include the mountain ranges to the northeast that prevent the transport of pollutants. Air quality in the SCAB generally ranges from fair to poor and is similar to air quality in most of coastal southern California. The entire region experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions.

The quality of the ambient air is affected by pollutants emitted into the air from stationary and mobile sources. Stationary sources can be divided into two major subcategories: point sources and area sources. Point sources consist of one or more emission sources at a facility with an identified location and are usually associated with manufacturing and industrial processing plants. Area sources are widely distributed and produce many small emissions.

Mobile sources refer to emissions from motor vehicles (including tailpipe and evaporative emissions) and are classified as either on-road or off-road. On-road sources are a combination of emissions from automobiles, trucks, and indirect sources. Indirect sources are sources that, by themselves, may not emit air contaminants; however, they indirectly cause the generation of air pollutants by attracting vehicle trips or consuming energy. Examples of indirect sources include a commercial center that generates vehicle trips and consumes energy resources through the use of natural gas for space and water heating. Indirect sources also include actions proposed by local governments, such as public and private development projects. In addition, indirect sources include those emissions created by the distance vehicles travel. Off-road sources include aircraft, ships, trains, and self-propelled construction equipment.

3.2.2 Criteria Air Pollutants

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by State and federal law. These regulated air pollutants are known as “criteria air pollutants” and are categorized as primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxides (NOx, sulfur dioxide (SO_2), and most fine particulate matter (PM_{10} and $PM_{2.5}$) including lead (Pb) and fugitive dust are primary air pollutants. Of these CO, SO_2, PM_{10}, and $PM_{2.5}$ are criteria pollutants. ROG and NOx are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reaction in the atmosphere. Ozone (O_3) and nitrogen dioxide (NO_2) are the principal secondary pollutants.

Presented below is a description of each of these primary and secondary criteria air pollutants and their known health effects. Other pollutants, such as carbon dioxide (CO_2), a natural by-product of animal respiration that is also produced in the combustion process, have been linked to such phenomena as global warming. These emissions are now starting to be regulated and there are preliminary thresholds for their release. However, these pollutants do not jeopardize the attainment status of the SCAB.

- **Carbon monoxide** (CO) is a colorless, odorless, toxic gas produced by incomplete combustion of carbon substances (e.g., gasoline or diesel fuel). The primary adverse health effect associated with CO is the interference of normal oxygen transfer to the blood, which may result in tissue oxygen deprivation.

- **Reactive organic gases** (ROGs) are compounds comprised primarily of atoms of hydrogen and carbon. Internal combustion, associated with motor vehicle usage, is the major source of hydrocarbons. Other sources of ROG include the evaporative emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROG but rather by reactions of ROG to form secondary pollutants. Note that for the purposes of this analysis, ROG and volatile organic compounds (VOC) are synonymous.

- **Nitrogen oxides** (NOx) serve as integral participants in the process of photochemical smog production. The two major forms of NOx are nitric oxide (NO) and nitrogen dioxide (NO_2). NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. NO_2 is a reddish-brown irritating gas formed by the combination of NO and oxygen (O). NOx acts as an acute respiratory irritant and increases susceptibility to respiratory pathogens.

- **Nitrogen dioxide** (NO_2) is a byproduct of fuel combustion. The principal form of NO_2 produced by combustion is nitric oxide (NO). NO reacts to form NO_2, creating the mixture of NO and NO_2 commonly called NOx. NO_2 acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, NO_2 is only potentially irritating. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis. Some increase in bronchitis in children (2-3 years old) has been observed at concentrations below 0.3 parts per million (ppm). NO_2 absorbs blue light, resulting in a brownish-red cast to the atmosphere and reduced visibility. NO_2 also contributes to the formation of PM_{10} (particulates having an aerodynamic diameter of 10 microns or 0.0004 inch or less in diameter).

- **Sulfur dioxide** (SO_2) is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. Fuel combustion is the primary source of SO_2. At sufficiently high concentrations, SO_2 may irritate the upper respiratory tract. At lower concentrations, when combined with particulates, SO_2 may injure lung tissue.

- **Particulate matter** (PM) consists of finely divided solids or liquids, such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulate are now recognized. Course particles (PM_{10}) include that portion of the particulate matter with an aerodynamic diameter of 10 microns (i.e., 10 one-millionths of a meter or 0.0004 inch) or less. Fine particles ($PM_{2.5}$) have an aerodynamic diameter of 2.5 microns (i.e., 2.5 one-millionths of a meter or 0.0001 inch) or less. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. Wind action on the arid landscape also contributes substantially to the local particulate loading. Both PM_{10} and $PM_{2.5}$ may adversely affect the human respiratory system, especially in those people who are naturally sensitive or susceptible to breathing problems.

- **Fugitive dust** poses primarily two public health and safety concerns. The first concern is that of respiratory problems attributable to the suspended particulates in the air. The second concern is that of motor vehicle accidents caused by reduced visibility during severe wind conditions. Fugitive dust may also cause significant property damage during strong windstorms by acting as an abrasive material agent. Fugitive dust can also result in a nuisance factor due to the soiling of proximate structures and vehicles.

- **Ozone** (O_3) is one of a number of substances called photochemical oxidants that are formed when reactive organic compounds (ROC) and NOx (both byproducts of the internal combustion engine) react with sunlight. O_3 is present in relatively high concentrations in the SCAB and the damaging effects of photochemical smog are generally related to the concentrations of O_3. O_3 may pose a health threat to those who already suffer from respiratory diseases as well as healthy people. O_3 has been tied to crop damage (typically in the form of stunted growth and pre-mature death) and acts as a corrosive (resulting in property damage such as the embitterment of rubber products).

3.2.3 Toxic Air Contaminants

The public's exposure to toxic air contaminants (TACs) is an environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The Health and Safety (H&SC) defines a TAC as “an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health.” A substance that is listed as a hazardous air pollutant (HAP), pursuant to Section 112(b) (42 USC 7412[b]) of the federal Clean Air Act of 1970 (CAA) (42 USC Section 7401 et seq.) is a TAC.

Under State law, the California Environmental Protection Agency (CalEPA), acting through the California Air Resources Board (CARB), is authorized to identify a substance as a TAC if it determines the substance is an air pollutant which may cause or contribute to an increase in mortality or serious illness or which may pose a present or potential hazard to human health.

California regulates TACs primarily through Assembly Bill (AB) 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics “Hot Spot” Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an “airborne toxics control measure” for sources that emit designated TACs. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology (T-BACT) to minimize emissions.

Air toxics from stationary sources are regulated in California under the Air Toxics “Hot Spot” Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality control board (AQMD) or air pollution control district (APCD). High priority facilities are required to perform a health risk assessment and, if specific thresholds are exceeded, required to communicate the results to the public in the form of notices and public meetings. To date, the CARB has designated nearly 200 compounds as TACs. Additionally, the CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to a relatively few compounds, the most important being particulate matter from diesel-fueled engines (diesel PM).

In 2000, the SCAQMD conducted a study on ambient concentrations of TACs and estimated the potential health risks from air toxics. The results showed that the overall risk for excess cancer from a lifetime exposure to ambient levels of air toxics was about 1,400 in a million. The largest contributor to this risk was diesel exhaust, accounting for 71 percent of the air toxics risk.

3.2.4 Other Effects of Air Pollution

Just as humans are affected by air pollution, so too are plants and animals. Animals must breathe the same air and are subject to the same types of negative health effects. Certain plants and trees may absorb air pollutants that can stunt their development or cause premature death, as well as interfere with their ability to convert CO_2 to oxygen. There are also numerous impacts to our economy including lost workdays due to illness, a desire on the part of business to locate in areas with a healthy environment, and increased expenses from medical costs. Pollutants may also lower visibility and cause damage to property. Certain air pollutants are responsible for discoloring painted surfaces, eating away at stones used in buildings, dissolving the mortar that holds bricks together, and cracking tires and other items made from rubber.

3.2.5 Greenhouse Gas Emissions

In 2005, in recognition of California's vulnerability to the effects of climate change, Governor Schwarzenegger established Executive Order S-3-05, which sets forth a series of target dates by which statewide emission of greenhouse gas would be progressively reduced, as follows:

- By 2010, reduce greenhouse gas emissions to 2000 levels;
- By 2020, reduce greenhouse gas emissions to 1990 levels; and
- By 2050, reduce greenhouse gas emissions to 80 percent below 1990 levels.

In 2006, California passed the California Global Warming Solutions Act of 2006 (AB 32; Sections 38500 et seq., Division 25.5, H&SC), which requires CARB to design and implement emission limits, regulations, and other measures, such that feasible and cost-effective statewide greenhouse gas emissions are reduced to 1990 levels by 2020 (representing an approximate 25 percent reduction in emissions).

In June 2007, CARB directed staff to pursue 37 early actions for reducing greenhouse gas emissions under AB 32. The broad spectrum of strategies to be developed – including a Low Carbon Fuel Standard, regulations for refrigerants with high global warming potentials, guidance and protocols for local governments to facilitate greenhouse gas reductions, and green ports – reflects that the serious threat of climate change requires action as soon as possible.

In addition to approving the greenhouse gas reduction strategies, CARB directed staff to further evaluate early action recommendations made at the June 2007 meeting, and to report back to CARB within 6 months. The general sentiment of CARB suggested a desire to try to pursue greater greenhouse gas emissions reductions in California in the near-term. Since the June 2007 CARB hearing, CARB staff has evaluated all 48 recommendations submitted by several stakeholder and several internally-generated staff ideas and published the Expanded List of Early Action Measures To Reduce Greenhouse Gas Emissions In California, recommended for board consideration in October 2007. Based on its additional analysis, CARB staff is recommending the expansion of the early action list to a total of 44 measures. Nine of the strategies meet the AB 32 definition of discrete early action measures. Discrete early action measures are measures that will be in place and enforceable by January 1, 2010. The discrete early action items included: (1) a low-carbon fuel standards for ethanol, biodiesel, hydrogen, electricity, compressed natural gas, liquefied petroleum gas, and biogas; (2) restrictions on High Global Warming Potential Refrigerants; (3) landfill methane capture; (4) Smartway truck efficiency; (5) port dlectrification; (6) reduction of perfluorocarbons from the semi-conductor

industry; (7) reduction of propellants in consumer products; (8) tire inflation; and (9) sulfur hexafluoride (SF_6) reductions from non-electricity sector.

The 2020 target reductions are currently estimated to be 174 million metric tons of carbon dioxide (CO_2) equivalent ($MMTCO_2e$). In total, the recommended early actions have the potential to reduce greenhouse gas emissions by at least 42 $MMTCO_2e$ emissions by 2020, representing about 25 percent of the estimated reductions needed by 2020. The CARB Board adopted Resolution 07-55 in December 2007, approving 427 $MMTCO_2e$ as the statewide greenhouse gas emissions limit for 2020, which is equivalent to the 1990 emissions level. The measures are in the sectors of fuels, transportation, forestry, agriculture, education, energy efficiency, commercial, solid waste, cement, oil and gas, electricity, and fire suppression.

3.3 Ambient Air Quality Standards

The federal Clean Air Act Amendment of 1971 established national Ambient Air Quality Standards (AAQS) with states retaining the option to adopt more stringent standards or to include other pollution species. These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those "sensitive receptors" most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both the State and the federal government have established health-based Ambient Air Quality Standards for six air pollutants. As shown in Table AQ-1 (Ambient Air Quality Standards for Criteria Pollutants), these pollutants include ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, suspended particulate matter (PM_{10}, $PM_{2.5}$), and lead. In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. In addition to primary and secondary Ambient Air Quality Standards, the State has established a set of episode criteria for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, and particulate matter. These criteria refer to episode levels representing periods of short-term exposure to air pollutants, which actually threaten public health.

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3.4 Air Quality Management Planning

3.4.1 Planning Requirements

The SCAQMD and the Southern California Association of Governments (SCAG) are the agencies responsible for preparing the "Air Quality Management Plan" (AQMP) for the SCAB. Since 1979, a number of AQMPs have been prepared. The AQMP was designed to comply with State and federal requirements, reduce the high level of pollutant emissions in the SCAB, and ensure clean air for the region through various control measures. To accomplish its task,

the AQMP relies on a multi-level partnership of governmental agencies at the federal, State, regional, and local level. These agencies (i.e., the USEPA, CARB, local governments, SCAG, and SCAQMD) are the cornerstones that implement the AQMP programs.

Table AQ-1
AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS

Pollutant	Averaging Time	California Standard	Federal Primary Standard	Major Pollutant Sources
Ozone (O_3)	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070	0.075 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO_2)	Annual Average	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	*	
Sulfur Dioxide (SO_2)	Annual Average	*	0.03 ppm	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	*	
	24 hours	0.04 ppm	0.14 ppm	
Suspended Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 $\mu g/m^3$	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g. wind-raised dust and ocean sprays).
	24 hours	50 $\mu g/m^3$	150 $\mu g/m^3$	
Suspended Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 $\mu g/m^3$	15 $\mu g/m^3$	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g. wind-raised dust and ocean sprays).
	24 hours	*	35 $\mu g/m^3$	
Lead (Pb)	Monthly	1.5 $\mu g/m^3$	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Quarterly	*	1.5 $\mu g/m^3$	
Sulfates (SO_4)	24 hours	25 $\mu g/m^3$	*	Industrial processes.

Notes:
ppm: parts per million; $\mu g/m^3$: micrograms per cubic meter
* = standard is not applicable for this pollutant/duration by this entity.

Source: California Air Resources Board

On December 7, 2012, the SCAQMD adopted the "2012 Air Quality Management Plan" (2012 AQMP). The purposes of the 2012 AQMP for the Basin are to set forth a comprehensive and integrated program that will lead the Basin into compliance with the federal 24-hour $PM_{2.5}$ air quality standard, to satisfy the planning requirements of the federal Clean Air Act, and to provide an update to the Basin's commitments towards meeting the federal 8- hour ozone standards. It will also serve to satisfy the recent United States Environmental Protection Agency (USEPA) proposed requirement for a new attainment demonstration of the revoked 1-hour ozone standard, as well as a vehicle miles travelled (VMT) emissions offset demonstration. Specifically, the Plan will serve as the official SIP submittal for the federal 2006 24-hour $PM_{2.5}$ standard, for which USEPA has established a due date of December 14, 2012. In addition, the 2012 AQMP will update specific new control measures and commitments for emissions reductions to implement the attainment strategy for the 8-hour ozone SIP, and thus help to

reduce reliance on CAA Section 182(e)(5) long-term measures. Once approved by the SCAQMD's Governing Board and CARB, the 2012 AQMP will be submitted to USEPA as the 24-hour $PM_{2.5}$ SIP addressing the 2006 $PM_{2.5}$ NAAQS and as a limited update to the approved 8-hour ozone SIP. The 1-hour ozone attainment demonstration and VMT emissions offset demonstration will also be submitted through CARB to the USEPA.

The 2012 AQMP incorporates the most recent planning assumptions and the best available information including: revised stationary point and area source emissions inventories; on-road and off-road mobile source emissions inventories based on CARB's latest EMFAC2011 and Off-Road Models; the use of new meteorological episodes for ozone and expanded air quality modeling analysis; and the latest demographic growth forecasts based on the approved "2012 Regional Transportation Plan" (2012 RTP) developed by SCAG.

3.4.2 Air Quality Attainment Status

Areas that meet the ambient air quality standards are classified as "attainment" areas while areas that do not meet these standards are classified as "non-attainment" areas. The severity of the classifications for ozone non-attainment include and range in magnitude from: marginal, moderate, serious, severe, and extreme. The attainment status for the SCAB is included in Table AQ-2 (Attainment Status for the South Coast Air Basin).

Table AQ-2
ATTAINMENT STATUS FOR THE SOUTH COAST AIR BASIN

Pollutant	State Status	Federal Status
Ozone (1-hour)	Extreme Non-attainment	Extreme Non-attainment (under the prior standard)
Ozone (8-hour)	Extreme Non-Attainment	Severe-17 (may petition for Extreme)
PM_{10}	Serious Non-attainment	Serious Non-attainment
$PM_{2.5}$	Non-attainment	Non-attainment
CO	Attainment	Attainment/Maintenance
NO_2	Attainment	Attainment/Maintenance

Source: California Air Resources Board

The Basin is also designated as attainment of the California Ambient Air Quality Standards (CAAQS) for SO_2, lead, and sulfates. Areas that are designated as Severe-17 for the ozone standard must meet attainment of the 8-hour standard by 2021 (2024 if reclassified to Extreme). Areas considered as serious non-attainment of the PM_{10} standards must have reached attainment by the end of 2006, or as expeditiously as possible. To date, the Basin still does not meet this standard. The $PM_{2.5}$ attainment date is to be met in the year 2015.

3.4.3 State Planning Requirements

Executive Order S-3-05

Under Executive Order S-3-05, as signed by Governor Arnold Schwarzenegger on June 1, 2005, the following greenhouse gas (GHG) emission reduction targets were established for California: (1) by 2010, reduce GHG emissions to 2000 levels; (2) by 2020, reduce GHG emissions to 1990 levels; and (3) by 2050, reduce GHG emissions to 80 percent below 1990 levels. In response, in March 2006, the CalEPA published a Climate Action Team (CAT) report

detailing how State agencies could implement a series of policies to meet the 2010 and 2020 goals. As indicated therein, among the policy actions that are cited are "smart land use and intelligent transportation." The CAT states that smart land use is an umbrella term for strategies that integrate transportation and land-use decisions. Such strategies generally encourage jobs/housing proximity, promote transit-oriented development, and encourage high-density residential/commercial development along transit corridors. These strategies develop more efficient land-use patterns within each jurisdiction or region to match population increases, workforce, and socioeconomic needs for the full spectrum of the population. Intelligent transportation systems (ITS) is the application of advanced technology systems and management strategies to improve operational efficiency of transportation systems and movement of people, goods, and service.[1]

California Health and Safety Code

Section 41700 of the H&SC requires that "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, response, health, or safety of any such person or the public, or which causes, or have a natural tendency to cause, injury or damage to business or property." Section 39606(b) of the H&SC authorizes the California Air Resources Board (CARB) to adopt standards for ambient air quality "in consideration of public health and safety, and welfare, including but not limited to health, illness, irritation to the senses, aesthetic value, interference with visibility, and the effects of air pollution on the economy." The objective of ambient air quality standards (AAQS) is to provide a basis for preventing or abating adverse health or welfare effects of air pollution (17 CCR 70101).

Section 39607(e) requires that the CARB establish and periodically review area designation criteria. The CARB makes area designations for the following nine criteria pollutants: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter less than 10 microns (PM_{10}), sulfates (SO_4), lead (Pb), hydrogen sulfide (H_2S), and visibility-reducing particles. Assembly Bill 2595, known as the California Clean Air Act (CCAA), divided non-attainment areas into categories with progressively more stringent requirements (Sections 40918-40920.5, H&SC). As specified, it is the responsibility of each air pollution control district (APCD) and air quality management district (AQMD) within the State to attain and maintain California Ambient Air Quality Standards (CAAQS).[2] The CCAA requires that an attainment plan be developed by all non-attainment districts for O_3, CO, sulfur oxides (SOx), and nitrogen oxides (NOx) that are either receptors or contributors of transported air pollutants. The CAAQS are listed in Table AQ-1 (Ambient Air Quality Standards for Criteria Pollutants).[3] Areas meeting CAAQS are classified as attainment; areas not meeting CAAQS are classified as non-attainment.

Assembly Bill 32 (California Global Warming Solutions Act of 2006), codified in Section 38500 et seq. of the H&SC, established a comprehensive program to reduce GHG by 2020 and identifies

[1]/ California Environmental Protection Agency, Climate Action Team Report to Governor Schwarzenegger and the Legislature, March 2006, p. 58.

[2]/ The CARB considers an area to be non-attainment of a CAAQS for a particular pollutant if the standards for O_3, CO (except Lake Tahoe), SO_2 (1 hour and 24 hour), NO_2, PM_{10}, and visibility-reducing particles are exceeded.

[3]/ These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. In addition to primary and secondary ambient air quality standards, the State has established a set of episode criteria for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, and particulate matter. These criteria refer to episode levels representing periods of short-term exposure to air pollutants which threaten public health.

several major requirements that CARB is required to implement, including: (1) adoption and implementation of a list of discrete and early action GHG reduction measures; (2) approval of a Statewide1990 emission level that becomes the Statewide 2020 emissions limits; (3) adoption of mandatory GHG reporting rules for significant GHG sources; and (4) adoption of regulations to achieve the maximum technologically feasible and cost-effective reductions. As defined in Section 38505 of the H&SC, greenhouse gases include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

3.4.4 Federal Clean Air Act Requirements

The Federal Clean Air Act of 1970 (42 USC Section 7401 et seq.) (CAA) requires any new major stationary sources of air pollution and any major modifications to major stationary sources to obtain an air pollution permit before commencing construction. New Source Review (NSR) requirements (42 USC 7411) differ depending on the attainment status of the area where the major facility is to be located. Prevention of Significant Deterioration (PSD) requirements (42 USC 7470-7491) apply in areas that are in attainment of the National Ambient Air Quality Standards (NAAQS). Non-attainment area NSR requirements apply to areas that have not been able to demonstrate compliance with the NAAQS.

Section 108 of the CAA directs the United States Environmental Protection Agency (USEPA) to list pollutants that may reasonably be anticipated to endanger public health and welfare and to issue air quality criteria for those pollutants. The USEPA has set NAAQS for the following pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM), and sulfur dioxide (SO_2). The NAAQS for those primary pollutants are listed in Table AQ-1 (Ambient Air Quality Standards for Criteria Pollutants). Section 176(c) prohibits federal agencies from taking actions in NAAQS non-attainment or maintenance areas that do not conform to the State Implementation Plan (SIP) for the attainment and maintenance of NAAQS pursuant to Section 110(a).[4]

3.5 Baseline Air Quality

Existing levels of ambient air quality and historical trends and projections in the project area are best documented by measurements made by the SCAQMD. The project is located within Source Receptor Area (SRA) 9 (East San Gabriel Valley). Data from this station is summarized in Table AQ-3. (Air Quality Monitoring Summary for the East San Gabriel Valley Monitoring Station) The measurements have shown that while ozone levels continue to exceed the California and national hourly standards, these occurrences show no clear trend over the last 5 years, though latter years show a marked decrease in the number of violations from the historical numbers of earlier years.

Although NO_2 measurements indicate that no standards were exceeded, NO_2 is a precursor to O_3 formation, which occasionally does exceed the standards. Hydrocarbons and NO_2 are emitted by both mobile and stationary sources, with the greater portion emanating from mobile sources in the Basin. These concentrations increase during the summer, with concentrations increasing from the late morning through the afternoon.

[4]/ The purpose of conformity is to ensure federal activities do not interfere with the budgets in the SIPs, ensure actions do not cause or contribute to new violations, and ensure attainment and maintenance of the NAAQS.

Table AQ-3
AIR QUALITY MONITORING SUMMARY FOR THE EAST SAN GABRIEL VALLEY MONITORING STATION
(Number of Days Standards were Exceeded and Maximum Levels During Violations[1])

State and Federal Pollutant/Standard	2008	2009	2010	2011	2012
Ozone (O_3)					
State 1-hour > 0.09 ppm	34	23	5	13	18
State 8-hour >0.07 ppm	39	32	10	19	18
Federal 1-hour > 0.12 ppm	7	4	0	0	1
Federal 8-hour > 0.075 ppm	14	17	3	12	10
Max. 1-hour conc. (ppm)	0.135	0.150	0.081	0.111	0.134
Max. 8-hour conc. (ppm)	0.111	0.107	0.075	0.092	0.095
Carbon Monoxide (CO)					
State 8-hour ≥ 9.1 ppm	0	0	0	0	0
Max. 8-hour conc. (ppm)	1.6	1.7	1.3	1.4	1.2
Nitrogen Dioxide (NO_2)					
State 1-hour > 0.18 (ppm)	0	0	0	0	0
Max. 1-hour conc. (ppm)	0.10	0.10	0.0772	0.0795	0.0718
Inhalable Particulates (PM_{10})[1]					
State 24-hour > 50 µg/m^3	13/49	7/52	5/55	9/61	6/61
Federal 24-hour > 150 (µg/m^3)	0/49	0/52	0/55	0/61	0/61
Max. 24-hour conc. (µg/m^3)	98	74	70	65	78
Inhalable Particulates ($PM_{2.5}$)[1]					
Federal 24-Hour > 35 µg/m^3	5/321	6/153	1/93	1/118	1/118
Max. 24-Hour Conc. (µg/m^3)	53.1	72.1	44.4	49.5	39.6

Notes:
1. Violations per number of samples.
ppm: parts per million; µg/m^3: micrograms per cubic meter

Source: South Coast Air Quality Management District

With regard to particulate matter, no trend is readily apparent. The State standard for PM_{10} was exceeded 40 of the 278 times (14.4 percent) in the last 5 years that it was monitored. The federal standard has not been violated in the last 5 years. The federal standard for $PM_{2.5}$ was, however, exceeded 14 of the 803 times (1.7 percent) in the last 5 years. Suspended particulate matter (both total suspended particulates [TSP], and PM_{10} and $PM_{2.5}$) is a mixture of natural and manmade materials that include soil particles, biological materials, sulfates, nitrates, organic compounds, and lead. Smaller particles (PM_{10}, $PM_{2.5}$) are created by the combustion of fossil fuels, but are also given off from tire wear and brake dust.

3.6 Standard Conditions and Uniform Codes

All projects constructed in the SCAB are subject to standard conditions and uniform codes. Compliance with these provisions is mandatory and, as such, does not constitute mitigation under CEQA. Those conditions specific to air quality are included below.

- Adherence to SCAQMD Rule 403, which sets requirements for dust control associated with grading and construction activities.
- Adherence to SCAQMD Rules 431.1 and 431.2, which require the use of low sulfur fuel for stationary construction equipment.
- Adherence to SCAQMD Rule 1108, which sets limitations on ROG content in asphalt.

- Adherence to SCAQMD Rule 1113, which sets limitations on ROG content in architectural coatings.
- Adherence to SCAQMD Rule 1143, which sets limitations on ROG content in consumer paint thinners and multi-purpose solvents.

The project shall comply with Title 24 energy-efficient design requirements as well as the provision of window glazing, wall insulation, and efficient ventilation methods in accordance with the requirements of the Uniform Building Code (UBC).

During construction, the project would be subject to SCAQMD Rule 403 (Fugitive Dust). SCAQMD Rule 403 does not require a permit for construction activities but sets forth general and specific requirements for all construction sites (as well as other fugitive dust sources) in the Basin. The general requirement prohibits a person from causing or allowing emissions of fugitive dust from construction (or other fugitive dust source) such that the presence of such dust remains visible in the atmosphere beyond the property line of the emissions source. SCAQMD Rule 403 also prohibits a construction site from causing an incremental PM_{10} concentration impact at the property line of more than 50 $\mu g/m^3$ as determined through PM_{10} high-volume sampling. The concentration standard and associated PM_{10} sampling do not apply if specific measures identified in the rule are implemented and appropriately documented.

In accordance with Rule 403, the SCAQMD requires that contractors implement Best Available Control Technology (BACT) for construction activities. Rule 403 identifies two sets of specific measures, one for projects less than 50 acres and another set of conditions for projects that exceed 50 acres. The requirements applicable to the project are included in Table AQ-4 (SCAQMD Required Best Available Control Measures). These measures are regulatory requirements and, as such, do not constitute mitigation under CEQA.

3.7 Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardio-respiratory diseases. Residential areas are considered to be sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Schools are also considered as sensitive since children are present for extended durations and engage in regular outdoor activities.

Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution since exposure periods are relatively short and intermittent, as the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public.

The project is in a zoned industrial use area and is not sensitive in nature. The areas to the north, south, and west are also industrial and are not sensitive land uses. Residential uses, however, are located to the east along Morada Street with the nearest of these units on the order of 10 feet from the site boundary. Additionally, Our Lady of Guadalupe Mission Church

fronts on Arrow Highway just east of the project site with the structure also at a similar distance from the project site.

Table AQ-4
SCAQMD REQUIRED BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measures	Guidance
Backfilling	Stabilize backfill material when not actively handling; and Stabilize backfill material during handling; and Stabilize soil at completion of activity	Mix backfill soil with water prior to moving; and Dedicate water truck or high capacity hose to backfilling equipment; and Empty loader bucket slowly so that no dust plumes are generated; and Minimize drop height from loader bucket.
Clearing and Grubbing	Maintain stability of soil through prewatering of site prior to clearing and grubbing; and Stabilize soil during clearing and grubbing activities; and Stabilize soil immediately after clearing and grubbing activities.	Maintain live perennial vegetation where possible; and Apply water in sufficient quantity to prevent generation of dust plumes.
Clearing Forms	Use water spray to clear forms; or Use sweeping and water spray to clear forms; or Use vacuum system to clear forms.	Use of high pressure air to clear forms may cause exceedance of Rule requirements.
Crushing	Stabilize surface soils prior to operation of support equipment; and Stabilize material after crushing.	Follow permit conditions for crushing equipment; Pre-water material prior to loading into crusher; Monitor crusher emissions opacity; and Apply water to crushed material to prevent dust plumes.
Cut and Fill	Pre-water soils prior to cut and fill activities; and Stabilize soil during and after cut and fill activities.	For large sites, pre-water with sprinklers or water trucks and allow time for penetration; and Use water trucks/pulls to water soils to depth of cut prior to subsequent cuts.
Demolition Mechanical/Manual	Stabilize wind erodible surfaces to reduce dust; and Stabilize surface soil where support equipment and vehicles will operate; and Stabilize loose soil and demolition debris; and comply with Rule 1403.	Apply water in sufficient quantities to prevent the generation of visible dust plumes.
Disturbed Soil	Stabilize disturbed soil throughout the construction site; and Stabilize disturbed soil between structures	Limit vehicular traffic and disturbances on soils where possible; and If interior block walls are planned, install as early as possible; and Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes.
Earth-Moving Activities	Pre-apply water to depth of proposed cuts; and Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction; and Stabilize soils once earth-moving activities are complete.	Grade each project phase separately, timed to coincide with construction phase; and Upwind fencing can prevent material movement on site; and Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes.

Table AQ-4 (Continued)
SCAQMD REQUIRED BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measures	Guidance
Importing/Exporting of Bulk Materials	Stabilize material while loading to reduce fugitive dust emissions; and Maintain at least six inches of freeboard on haul vehicles; and Stabilize material while transporting to reduce fugitive dust emissions; and Stabilize material while unloading to reduce fugitive dust emissions; and Comply with CVC Section 23114.	Use tarps or other suitable enclosures on haul trucks; and Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage; and Comply with track-out prevention/mitigation requirements; and Provide water while loading and unloading to reduce visible dust plumes.
Landscaping	Stabilize soils, materials, slopes	Apply water to materials to stabilize; and Maintain materials in a crusted condition; and Maintain effective cover over materials; and Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes; and Hydroseed prior to rain season.
Road Shoulder Maintenance	Apply water to unpaved shoulders prior to clearing; and Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance.	Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs; and Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs.
Screening	Pre-water material prior to screening; and Limit fugitive dust emissions to opacity and plume length standards; and Stabilize material immediately after screening.	Dedicate water truck or high capacity hose to screening operation; and Drop material through the screen slowly and minimize drop height; and Install wind barrier with a porosity of no more than 50% upwind of screen to the height of the drop point.
Staging Areas	Stabilize staging areas during use; and Stabilize staging area soils at project completion.	Limit size of staging area; and Limit vehicle speeds to 15 miles per hour; and Limit number and size of staging area entrances/exits.
Stockpiles/Bulk Material Handling	Stabilize stockpiled materials, and stockpiles within 100 yards of off-site occupied buildings must not be greater than eight feet in height; or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage.	Add or remove material from the downwind portion of the storage pile; and Maintain storage piles to avoid steep sides or faces.

Table AQ-4 (Continued)
SCAQMD REQUIRED BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measures	Guidance
Traffic Areas for Construction Activities	Stabilize all off-road traffic and parking areas; and Stabilize all haul routes; and Direct construction traffic over established haul routes.	Apply gravel/paving to all haul routes as soon as possible to all future roadway areas; and Barriers can be used to ensure vehicles are only used on established parking areas/haul routes.
Trenching	Stabilize surface soils where trencher or excavator and support equipment will operate; and Stabilize soils at the completion of trenching activities.	Pre-watering of soils prior to trenching is an effective preventive measure. For deep trenching activities, pre-trench to 18 inches soak soils via the pre-trench and resuming trenching; and Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying of soil on equipment.
Truck Loading	Pre-water material prior to loading; and Ensure that freeboard exceeds six inches (CVC 23114)	Empty loader bucket such that no visible dust plumes are created; and Ensure that the loader bucket is close to the truck to minimize drop height while loading.
Turf Overseeding	Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plume length standards; Cover haul vehicles prior to exiting the site.	Haul waste material immediately off-site.
Unpaved Roads/Parking Lots	Stabilize soils to meet the applicable performance standards; and Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots.	Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements.
Vacant Land	In instances where vacant lots are 0.10 acre or larger and have a cumulative area of 500 square feet or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking and/or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees or other effective control measures.	

Source: South Coast Air Quality Management District

4.0 THRESHOLD OF SIGNIFICANCE CRITERIA

Presented below are the threshold of significance criteria identified by the SCAQMD relative to this topical issue. In accordance therewith, the proposed project would normally be deemed to produce a significant land use impact if the project or if project-related activities were to:

- Conflict with or obstruct implementation of the applicable air quality plan.

- Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standards.
- Expose sensitive receptors to substantial air pollutant concentrations.
- Create objectionable odors affecting a substantial number of people.
- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

As indicated in Section 15064(i)(1) of the State CEQA Guidelines, “cumulatively considerable” is defined to mean “that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.”

In order to determine whether or not the proposed project would cause a significant effect on the environment, the impact of the project must be determined by examining the types and levels of emissions generated and its impacts on factors that affect air quality. To accomplish this determination of significance, the SCAQMD has established air pollution thresholds against which a proposed project can be evaluated and assist lead agencies in determining whether or not the proposed project is significant. If the thresholds are exceeded by a proposed project, then it should be considered significant.

While the final determination of whether or not a project is significant is within the purview of the lead agency, the SCAQMD recommends that the following air pollution thresholds be used in determining whether the construction or operational phase of a proposed project is significant. As recommended by the SCAQMD, if the lead agency finds that the project has the potential to exceed any of these air pollution thresholds, the project should be considered significant.

4.1 Construction Phase

The following significance thresholds for air quality have been established by the SCAQMD on a daily basis for construction emissions:

- 75 pounds per day for ROG
- 100 pounds per day for NOx
- 550 pounds per day for CO
- 150 pounds per day of SOx
- 150 pounds per day for PM_{10}
- 55 pounds per day for $PM_{2.5}$

During construction, if any of the identified daily air pollutant thresholds are exceeded by the proposed project, then the project’s air quality impacts may be considered significant.

4.2 Operational Phase

Specific criteria air pollutants have been identified by the SCAQMD as pollutants of special regional concern. Based upon this categorization, the following significance thresholds have been established by the SCAQMD for project operations:

- 55 pounds per day of ROG
- 55 pounds per day of NOx
- 550 pounds per day of CO
- 150 pounds per day of SOx
- 150 pounds per day of PM_{10}
- 55 pounds per day for $PM_{2.5}$

Projects within the SCAB with daily operation-related emissions that exceed any of the above emission thresholds may be considered significant. The SCAQMD indicates in Chapter 6 of their Handbook that they consider a project to be mitigated to a level of insignificance if its primary effects are mitigated below the thresholds provided above.

In addition to the criteria pollutants, the SCAQMD Working Group has established a tentative threshold of 3,000 metric tons (Mtons) per year for carbon dioxide (CO_2) equivalent (CO_2e) emissions for residential and commercial projects, and a threshold of 10,000 Mtons per year for industrial projects.

4.3 Local Emission Standards

In addition to the mass daily threshold values presented above, projects that have the ability to exceed or add measurably to an existing excess of the ambient concentrations presented in Table AQ-1 (Ambient Air Quality Standards for Criteria Pollutants) may be considered significant. The following localized significance thresholds have been established by the SCAQMD for individual projects:

- California State 1-hour CO standard of 20.0 ppm
- California State 8-hour CO standard of 9.0 ppm
- California State 1-hour NO_2 standard of 0.18 ppm
- SCAQMD 24-hour construction PM_{10} and $PM_{2.5}$ standards of 10.4 $\mu g/m^3$
- SCAQMD 24-hour operational PM_{10} and $PM_{2.5}$ standards of 2.5 $\mu g/m^3$

If ambient levels already exceed a State or federal standard, then project emissions are considered significant if they increase ambient concentrations by a measurable amount. In the case of CO, the SCAQMD defines a measurable amount as 1.0 ppm or more for the 1-hour CO concentration or 0.45 ppm or more for the 8-hour CO concentrations. The SCAQMD indicates that they consider a project to be mitigated to a less-than-significant level if the project's secondary effects are mitigated below these SCAQMD's recommended thresholds.

5.0 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

The Arrow Highway Business Park project would remove approximately 11,000 square feet of existing remnant structures and replace this with an approximately 133,000 square foot light industrial park. The entire parcel is approximately 6.25 acres, some of which is presently

covered with pavement. For the purposes of this analysis, it is estimated that 2.0 acres of the existing site includes a 6-inch layer of paving material that will be removed during demolition.

Once operational, the project would attract additional trucks, as well as employees and other people who would call on the facility. Projected air emissions are calculated using the CalEEMod emissions model, as distributed by the SCAQMD. The CalEEMod emissions model uses EMFAC2011 emissions factors for vehicle traffic and the OFFROAD2011 emissions factors for construction equipment. The daily number of vehicle trips is as projected in the project's transportation analysis.

For the purposes of this analysis, construction is scheduled to begin in 2015 and follow the CalEEMod construction schedule, thereby allowing operations to begin in 2016. Daily emissions are based on the higher of the summer or winter emissions projections, regardless of when those emissions actually occur.

The subsequent occupation of the site is also based on the CalEEMod model using traffic-projections provided in Sasaki Transportation Services' "Warehouse/Manufacturing Project, 16203-16233 Arrow Highway, City of Irwindale" (August 13, 2014). The transportation analysis considers a number of different site uses to produce a reasonable worst-case. In accordance with the transportation analysis, on a typical week day, the project is estimated to generate approximately 1,000 "passenger car equivalents" (PCE). These weekday trips are used in the calculation of the daily emissions.

The transportation analysis does not project weekend trips; however, because greenhouse gases are based on an annual threshold, weekend trips were modeled using the CalEEMod emissions model's "default" values for the existing land use to be removed and for the proposed land use to be constructed.

For ease of the reference, the analysis follows the format included in the State CEQA Guidelines' Appendix G (Environmental Checklist Form) for Section III (Air Quality) and Section VII (Greenhouse Gas Emissions), addressing each issue included therein, respectively.

5.1 Project Consistency with the Applicable Air Quality Plan

- **Less than Significant Impact**. CEQA requires that projects be consistent with the AQMP. A consistency determination plays an essential role in local agency project review by linking local planning and unique individual projects to the AQMP in the following ways: (1) fulfilling the CEQA goal of fully informing local agency decision-makers of the environmental costs of the project under consideration at a stage early enough to ensure that air quality concerns are fully addressed; and (2) providing the local agency with ongoing information assuring local decision-makers that they are making real contributions to clean air goals contained in the AQMP.

  Only new or amended general plan elements, specific plans, and regionally significant projects need to undergo a consistency review. This is because the AQMP strategy is based on projections from local general plans. Projects that are consistent with the local general plan are, therefore, considered consistent with the AQMP.

  As proposed, the Applicant seeks approval to construct and operate up to approximately 133,000 square feet of general industrial uses. The project is compatible with the

existing zoning and operational emissions are is not projected to exceed the daily threshold values suggested by the SCAQMD. Additionally, the project would not result in significant localized air quality impacts. With the provided mitigation for paint and coating emissions, site construction would not exceed the SCAQMD's recommended threshold values. As such, the project is consistent with the goals of 2012 AQMP and, in that respect, does not present a significant air quality impact.

5.2 Project Potential to Violate or Add to a Violation of an Air Quality Standard

The potential air quality impacts associated with and attributable to the proposed project's construction and operation are separately addressed below.

5.2.1 Construction Impacts

- **Less than Significant with Mitigation**. Air quality impacts may occur during demolition and construction activities required to implement the proposed land use. The project would remove existing remnant structures, estimated at about 11,000 square feet and replace it with up to approximately 133,000-square feet of light industrial use. The site was modeled as an "industrial park" rather than as separate manufacturing, warehousing, and office space because the actual land uses could change from their present configuration. This would create only small differences in construction emissions. For the purposes of this analysis it is assumed that two acres of the existing site includes a 6-inch layer of paving material that will be removed during demolition and replaced with the proposed land use during the construction period.

  Demolition equipment and debris removal are based on the CalEEMod emissions model's "default" values for the removal of the existing structures and the number of haul trips required to remove existing site paving. As noted, it is assumed that two acres of paving would be removed and this is estimated to have a 6-inch (0.5 foot) depth.

  $$2.0 \text{ acres} \times 43{,}560 \text{ ft}^2/\text{acre} \times 0.5 \text{ foot} = 43{,}560 \text{ ft}^3$$

  Asphaltic concrete is reported to weigh 140 pounds per cubic foot and documentation for the CalEEMod emissions model notes that each haul truck can move 20 tons at a time.

  $$43{,}560 \text{ ft}^3 \times 140 \text{ pounds/ft}^3 / 2{,}000 \text{ pounds/ton} / 20 \text{ tons/trip} = 152 \text{ truck trips}$$

  These trips were then added to the 50 truck trips predicted by the CalEEMod emissions model for the removal of the existing on-site structures for a total of 202 haul trips over the default 20 day demolition period or approximately 10 trucks per day.

  The remainder of the site construction was modeled using the "default" schedule which starts with demolition on January 1, 2015 and ends with the final painting of the structures on February 25, 2016. The major sources of emissions during construction include dust and exhaust emissions generated during demolition, site preparation, and site grading and the emission of ROGs (VOCs) during the painting of the structures. Table AQ-5 (Comparison of Projected Construction Emissions and Daily Criteria Values) includes the daily emissions projected for site construction. As indicated therein, ROG

(VOC) emissions given off from the application of paints and coatings could exceed the SCAQMD's recommended daily threshold after building construction. Mitigation is, therefore, warranted to reduce this impact to a less-than-significant level.

Table AQ-5
COMPARISON OF PROJECTED CONSTRUCTION EMISSIONS AND DAILY CRITERIA VALUES[1]
(pounds/day)

Source	ROG	NOx	CO	SO_2	PM_{10} Dust	PM_{10} Exhaust	PM_{10} Total	$PM_{2.5}$ Dust	$PM_{2.5}$ Exhaust	$PM_{2.5}$ Total
Demolition										
Off Road Diesel	4.51	48.36	36.07	0.04	0.11	2.45	2.56	0.02	2.29	2.29
Hauling	0.21	3.32	2.50	0.01	0.18	0.05	0.23	0.05	0.05	0.10
Worker Trips	0.08	0.10	1.15	0.00	0.17	0.00	0.17	0.04	0.00	0.05
Totals	4.80	51.78	39.72	0.05	0.46	2.50	2.96	0.11	2.34	2.44
Site Preparation										
Off Road Diesel	5.26	56.89	42.63	0.04	3.65	3.09	6.75	2.01	2.84	4.85
Worker Trips	0.09	0.12	1.38	0.00	0.20	0.00	0.20	0.05	0.00	0.06
Totals	5.35	57.01	44.01	0.04	3.85	3.09	6.95	2.06	2.84	4.91
Grading										
Off Road Diesel	3.83	40.41	26.67	0.03	1.33	2.33	3.66	0.68	2.14	2.82
Worker Trips	0.08	0.10	1.15	0.00	0.17	0.00	0.17	0.04	0.00	0.05
Totals	3.91	40.51	27.82	0.03	1.50	2.33	3.83	0.72	2.14	2.87
Building Construction										
Off Road Diesel	3.66	30.03	18.74	0.03	0.00	2.12	2.12	0.00	1.99	1.99
Vendor Trips	0.23	2.23	2.93	0.00	0.14	0.04	0.17	0.04	0.03	0.07
Worker Trips	0.29	0.39	4.28	0.01	0.63	0.01	0.63	0.17	0.01	0.17
Totals	4.18	32.65	25.95	0.04	0.77	2.17	2.92	0.21	2.03	2.23
Asphalt Paving										
Off Road Diesel	2.09	22.39	14.82	0.02	0.00	1.26	1.26	0.00	1.16	1.16
Worker Trips	0.07	0.09	1.04	0.00	0.17	0.00	0.17	0.04	0.00	0.05
Asphalt Totals	2.16	22.48	15.86	0.02	0.17	1.26	1.43	0.04	1.16	1.21
Coating										
Off-Gas	**154.11**[2]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off Road Diesel	0.37	2.37	1.88	0.00	0.00	0.20	0.20	0.00	0.20	0.20
Worker Trips	0.06	0.09	0.97	0.00	0.16	0.00	0.16	0.04	0.00	0.04
Coating Totals	**154.54**[2]	2.46	2.85	0.00	0.16	0.20	0.36	0.04	0.20	0.24
Daily Threshold	75	100	550	150	→	→	150	→	→	55

Notes:
1. The CalEEMod emissions model projects summer and winter emissions and the higher of the two values was included in the table.
2 Bold value denotes a potentially significant air quality impact.

Source: Environmental Impact Sciences

Mitigation

Mitigation of ROG (VOC) emissions can be accomplished by either of the following methods: (1) Option No. 1 - Painting and surface coating shall be limited to an aggregate area of no more than 6,400 square feet per day during any phase of construction; or (2) Option No. 2 - Paints and surface coatings shall be limited to no more than 120 milligrams per liter of VOC content.

Residual Impact

Building construction is estimated to release 154.54 pounds of ROG (VOC) per day from the "off-gassing" of paints and coatings for each of the 20 days associated with this phase of the schedule. The CalEEMod emissions model bases the area to be painted on twice the floor area (133,000 square feet x 2 = 266,000 square feet) and divides that area by the number of days allocated for this phase. Based on the model's "default" construction schedule, 20 days are allocated to painting the structures and 13,300 square feet per day (266,000 square feet/20 days = 13,300 square feet/day) of surface area would be painted.

The reduction to under the 75 pound-per-day ROG (VOC) threshold could be attained if the daily area to be painted is limited.

154.11 pounds/day / 13,300 ft^2/day = 0.0116 pounds/ft^2
75 pounds/day – (0.37 [equipment] + 0.06 worker travel]) pounds/day = 74.57 lbs/day
74.57 pounds/day / 0.0116 pounds/ft^2 = 6,435 ft^2/day

The restriction to coating no more than 6,435 square feet per day would, therefore, ensure that the impact is reduced to a less-than-significant level. Alternatively, the CalEEMod emissions model uses a value of 250 milligrams per liter (mg/l) for the VOC content in commercial and industrial paints and coatings.

75 pounds/day – (0.37 [equipment] + 0.06 [worker travel]) pounds/day = 74.57 lbs/day
74.57 pounds/day / 154.11 pounds/day x 250 mg/l = 121.0 mg/l

The restriction to no more than 121 milligrams per liter of VOC content in the coatings would, therefore, ensure that the impact is reduced to a less-than-significant level.

5.2.2 Operational Impacts

- **Less than Significant Impact**. The major source of long-term air quality impact is that associated with the emissions produced from project-generated vehicle trips. Stationary sources add only minimally to these values. In accordance with the traffic analysis, the proposed land uses would generate approximately 750 average daily trips (ADT). Since trucks have a greater influence on traffic conditions than automobiles, a conversion factor, described as a "passenger car equivalent" (PCE) is used, such that each truck is assigned a PCE value of 2. Because the 750 ADT already assumes a traffic mix (e.g., all vehicles assigned 1 PCE), the identification of 1,000 ADT in the traffic analysis assumes that 33 percent of identified traffic are trucks (750 + [750 x 0.33] = 1,000).

The CalEEMod model uses a vehicle mix that is projected from the BURDEN module of the EMFAC2011 computer model. The mix is reported to be representative of the County as a whole and includes 89.94 percent automobiles, 6.70 percent medium trucks, and 3.36 percent heavy trucks. Because the existing and proposed land uses represent industrial development, a larger percentage would be trucks.

The ratio for both medium and heavy trucks, combined, is estimated at 33 percent in the transportation analysis and that value is also used here. In this case, the ratio of medium to heavy trucks was retained from the CalEEMod emissions model. The CalEEMod model's "default" and revised ratios are shown in Table AQ-6 (CalEEMod Versus Proposed Project Vehicle Mixes).

Table AQ-6
CALEEMOD VERSUS PROPOSED PROJECT VEHICLE MIXES

Vehicle Type	CalEEMod Default Ratio	Proposed Project Ratio
Overall Ratios		
Automobiles	89.94	67.00
Medium Trucks	6.70	20.41
Heavy Trucks	3.36	12.59
Ratios By Vehicle Technology		
Automobiles		
LDA	53.36	39.75
LDT1	5.84	4.35
LDT2	17.82	13.27
MDV	12.55	9.35
MCY	0.37	0.28
Medium Trucks		
LHD1	3.89	11.85
LHD2	0.63	1.92
MHD	1.64	5.00
UBUS	0.32	0.97
SBUS	0.05	0.15
MH	0.17	0.52
Heavy Trucks		
HHD	3.11	11.65
OBUS	0.25	0.94

Source: Environmental Impact Sciences

Emissions associated with these trips are based on the CalEEMod emissions model and assume occupancy in 2016. Since emissions per vehicle are reduced each year due to more stringent emissions restrictions and the replacement of older vehicles from the road, the use of 2016 emission factors presents a worst-case analysis with regards to operational air quality impacts.

Both summer and winter scenarios were modeled and the higher of the two values are included in Table AQ-7 (Comparison of Projected Daily Operational Emissions and Daily Criteria Values). All emissions are projected at levels below their respective SCAQMD-recommended threshold values and the impact is, therefore, less than significant

Table AQ-7
COMPARISON OF PROJECTED DAILY OPERATIONAL EMISSIONS AND DAILY CRITERIA VALUES[1]
(pounds/day)

Source	ROG	NOx	CO	SO_2	PM_{10}	$PM_{2.5}$
Proposed Project						
Mobile Sources	4.28	27.34	52.13	0.12	6.96	2.14
Natural Gas	0.04	0.39	0.33	0.00	0.03	0.03
Structural Maintenance	0.84	0.00	0.00	0.00	0.00	0.00
Consumer Products	2.63	0.00	0.00	0.00	0.00	0.00
Landscape Maintenance	0.00	0.00	0.01	0.00	0.00	0.00
Total	7.79	27.73	52.47	0.12	6.99	2.17
Threshold	55	55	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No

Notes:
1. The CalEEMod model projects summer and winter emissions. These differ for mobile sources and the higher of the two values were included in the table.

Source: Environmental Impact Sciences

Stationary Source Emissions

With regards to stationary source emissions, in addition to vehicle trips, the occupants would produce emissions from on-site sources, including the combustion of natural gas for space and water heating. Additionally, the structures would be maintained and this requires repainting over time, thus resulting in the release of additional VOC (ROG) emissions. Also, the use of aerosol products such as cleaners, are associated with the project. The resultant emissions are included in Table AQ-7 (Comparison of Projected Daily Operational Emissions and Daily Criteria Values). All emissions are within their respective SCAQMD-recommended thresholds and the impact is less than significant.

5.3 Potential to Result in a Cumulatively Considerable Increase in Criteria Pollutants

- **Less than Significant Impact**. In accordance with SCAQMD methodology, projects that do not exceed or can be mitigated to less than the daily threshold values do not add significantly to a cumulative impact. With application of the construction mitigation for paints and coatings, criteria pollutants are all within the SCAQMD-recommended thresholds for both construction and operation and this impact is less than significant.

5.4.1 Potential to Expose Sensitive Receptors to Substantial Pollutant Concentrations

5.4.1 Short-Term Localized Impacts

- **Less than Significant with Mitigation**. In addition to the mass daily threshold standards discussed above, project construction has the potential to raise localized ambient pollutant concentrations. This could present a significant impact if these concentrations were to exceed the ambient air quality standards included in Table AQ-1 (Ambient Air Quality Standards for Criteria Pollutants) at receptor locations.

  The SCAQMD has developed screening tables for the construction and operation of projects up to five acres in size. These tables are included in the SCAQMD's "Final Localized Significance Threshold Methodology" (June 2003) and are periodically updated on the SCAQMD Internet web site. The most current update was in 2008 and these data are use in the analysis. The emissions values included in the screening tables are based on the emissions produced at the site and do not include off-site mobile source emissions (i.e., trucks and worker vehicles) that spread over a much larger area.

  Screening level allowable emissions are calculated from the "mass-rate look-up tables" included in the "Final Localized Significance Threshold Methodology" (Appendix C). Rather than using the entirety of the site, the CalEEMod emissions model bases the area of disturbance on equipment use. Dozers, graders, and crawler tractors are estimated to disturb an area of 0.5 acre while scrapers are estimated to disturb 1.0 acre over an 8-hour work day.

  The CalEEMod emissions model estimates that site preparation results in the highest levels of emission using three rubber tired dozers, each estimated at 0.5 acre of disturbance, or 1.5 acres per day in total. This phase would also include four tractor/loader/backhoes and, while these pieces generate on-site emissions, they operate primarily in one area so are not additive to the disturbed area, though their emissions are included in the area disturbed by the three dozers.

  The screening tables include sites of 1, 2, and 5 acres with receptors at 25, 50, 100, 200, and 500 meters away. The provided methodology notes that site sizes and receptor distances that lie between those values included in the screening manual may be determined by linear interpolation. The methodology also denotes that the 25 meter distance is the minimum distance to be used, even if receptors are located closer than this distance.

  The daily activity associated with site preparation is 1.5 acres and lies between the 1- and 2-acre sizes included in the manual. The most proximate sensitive receptors are those residences that border the east side of the site, along the west side of Morada Street, and Our Lady of Guadalupe Mission Church.

  In the cases of CO and NOx, construction emission levels are so far below the screening values that the project may be compared at the minimal screening size (i.e., 1 acre) and the most proximate receptor location (i.e., 25 meters). In this case, the screening levels for CO and NOx at 25 meters are 623 and 89 pounds per day, respectively, for projects

located in Source Receptor Area (SRA) 9 (East San Gabriel Valley). At peak values of 42.63 and 56.89 pounds per day for CO and NOx, respectively, during site preparation, these construction emissions would not create significant localized impacts.

Because the Basin is a non-attainment area for particulate matter, the thresholds for both PM_{10} and $PM_{2.5}$ are much more stringent than those for CO and NOx. In the case of PM_{10}, the screening tables show allowable values of 5 and 7 pounds per day for 1- and 2-acre sites, respectively, with receptors at 25 meters.

(5 lb/day + 7 lb/day) / 2 = 6 lbs/day threshold for 1.5 acres with receptors at 25 meters

For a receptor at 25 meters, the threshold would be set at 6 pounds per day. At 6.75 pounds per day for on-site (off-road diesel) PM_{10}, this impact is potentially significant.

In the case of $PM_{2.5}$, the screening tables show allowable values of 3 and 5 pounds per day for 1- and 2-acre sites, respectively, with receptors at 25 meters.

(3 lb/day + 5 lb/day) / 2 = 4 lb/day threshold for 1.5 acres with receptors at 25 meters

For a receptor at 25 meters, the threshold would be set at 4 pounds per day. At 4.85 pounds per day for on-site $PM_{2.5}$, this impact is also potentially significant.

Mitigation

Daily site watering during earthmoving activities shall be increased from the requisite twice to no less than three times and all dozers (or equivalent pieces) used in earth movement shall be equipped with no less than Level 1 diesel particulate filters.

Residual Impact

With the requirement for additional watering and diesel particulate filters, the on-site PM_{10} level during site preparation would be reduced from 6.75 to 5.33 pounds per day. The resultant level is then less than the 6 pounds per day threshold and the impact is reduced to less than significant. Similarly, these requirements would reduce the $PM_{2.5}$ loading from 4.85 to 3.89 pounds per day. This value is then under the 4 pounds per day threshold and the impact is reduced to less than significant.

5.4.2 Long-Term Localized Impacts

- **Less than Significant Impact**. Long-term effects of the proposed project could also be significant if they exceed the CAAQS. As noted for construction, these criteria only apply to CO, NO_2, PM_{10}, and $PM_{2.5}$. CO and NO_2 would be significant if the proposed project were to raise existing levels above those values included in the CAAQS. Because the Basin is a non-attainment area for particulate matter, the operational thresholds for both PM_{10} and $PM_{2.5}$ are set at a measurable increase of 2.5 $\mu g/m^3$.

  Because the proposed project will draw trucks that maneuver and idle on the project site, emissions from the on-site movement of vehicles was calculated and these values compared with the values presented in the SCAQMD's "Final Localized Significance Threshold Methodology." The analysis assumes that vehicles may idle on the site for a

period of no more than five minutes at any one time. An additional three minutes is allocated for on-site maneuvering. In this case, all 750 vehicles that would call on the site are estimated to idle on the site for 16 minutes per day to include ingress and egress. While this may be true of trucks, most people who call on the facility would spend far less time idling. These assumptions, therefore, represents a potential worst-case scenario.

Emission factors are obtained from the CARB based on the Internet's on-line EMFAC2011 model. The CARB does not project idle emissions, however, a speed of 5 miles per hour can be used in determining these factors (i.e., emission factor x 5 miles/hour/60 minutes/hour = emissions/minute). The results of this analysis indicate that 10.19 pounds of CO, 5.56 pounds of NOx, 0.09 pound of PM_{10}, and 0.08 pound of $PM_{2.5}$ would be produced on the project site per day.

As noted in the analysis of localized construction emissions, operational emission levels are far below the screening values and that the project may be compared both at the minimal screening size (i.e., 1 acre) and the most proximate receptor location (i.e., 25 meters). As with construction, the screening levels for CO and NOx at 25 meters are 623 and 89 pounds per day, respectively for projects located in SRA 9. At 10.20 and 5.55 pounds per day for CO and NOx, respectively, on-site vehicle movement and idling emissions would not create significant localized impacts.

Because the Basin is a non-attainment area for particulate matter, the thresholds for both PM_{10} and $PM_{2.5}$ are much more stringent than those for CO and NOx and, in these cases, there are different threshold values for construction and operation. In the case of PM_{10}, the screening tables show an allowable value of just two pounds per day for project operations over a 1-acre site with receptors at 25 meters. At 0.09 pound per day, this threshold value would not be exceeded. Similarly, the screening tables allow for an operational $PM_{2.5}$ threshold of just one pound per day for a one-acre site with receptors at 25 meters. At 0.08 pound per day, this value would not be exceeded. The project site is far larger than one acre and the most proximate receptors would be well in excess of the 25 meter minimum distance from truck maneuvering and idling used in the analysis.

5.5 Potential to Create Objectionable Odors

- **Less than Significant Impact**. Project construction would involve some use of heavy equipment creating exhaust pollutants. With regards to nuisance odors, any air quality impacts will be confined to the immediate vicinity of the equipment itself. By the time such emissions reach any sensitive receptor sites away from the project site, they will be diluted to well below any level of air quality concern. An occasional "whiff" of diesel exhaust from passing equipment and trucks accessing the site from public roadways may result. Such brief exhaust odors are an adverse but less-than-significant air quality impact. Additionally, some odor would be produced from the application of asphalt, paints, and coatings. Any exposure to these common odors would be of short-term duration and, while potentially adverse, are less than significant.

  Project operations would involve various light industrial uses. Such uses are not typically associated with the production of odors. The nearest sensitive land uses are located in excess of 50 feet from the nearest on-site structures. In light of the industrial nature of

the area and adjoining properties, no project-related objectionable odors are anticipated at any proximate sensitive residential locations.

5.6 Potential to Generate Greenhouse Gas Emissions, Either Directly or Indirectly, that may have a Significant Impact on the Environment

- **Less than Significant Impact**. To provide guidance to local agencies on determining the significance for GHG emissions in their CEQA documents, the SCAQMD has convened a GHG CEQA Significance Threshold Working Group for the process of establishing a threshold for GHG emissions to determine a project's regional contribution toward global climate change impacts. On September 28, 2010 the SCAQMD put forth a threshold of 3,000 metric tons (Mtons) of carbon dioxide equivalent (CO_2e) per year for residential, commercial, and mixed use projects and 10,000 Mtons CO_2e for industrial projects under CEQA. The SCAQMD also suggests that a threshold of 3,500 Mtons may be appropriate for residential development, commercial is limited to 1,400 Mtons, and mixed-use is limited to 3,000 Mtons so long as these values are used consistently.

Construction

Construction activities would consume fuel and result in the generation of GHGs. Construction CO_2e emissions are as projected using the CalEEMod emissions model and included in Table AQ-8 (Construction-Related Greenhouse Gas Emissions). The CalEEMod model begins construction on January 1 and includes an entire year in its prediction of the construction schedule. All emissions are within the threshold value and the impact is less than significant.

Table AQ-8
CONSTRUCTION-RELATED GREENHOUSE GAS EMISSIONS
(Mtons/year)

Year	CO_2	CH_4	N_2O	Total CO_2e[1]
2015	465.24	0.09	0.00	467.20
2016	59.20	0.01	0.00	59.47
Threshold	---	---	---	10,000
Exceeds Threshold?	---	---	---	No

Notes:
1. Because different gases have different conversion factors, totals may not equal.

Source: Environmental Impact Sciences

Site Operations

In the case of site operations, the majority of GHG emissions and specifically CO_2 is due to vehicle travel, energy consumption, and water use. As shown in Table AQ-9 (Yearly Operational Greenhouse Gas Emissions), CalEEMod projects that combined, mobile, area source, energy, waste, and water conveyance for the proposed project is estimated at about 2,985.64 Mtons of CO_2e on an annual basis. This value is well under the suggested threshold of 10,000 Mtons per year and the impact is less than significant.

Table AQ-9
YEARLY OPERATIONAL GREENHOUSE GAS EMISSIONS
(Mtons/year)

Source	CO_2	CH_4	N_2O	Total CO_2e[1]
Mobile Sources	1,491.56	0.04	0.00	1,492.45
Energy	1,153.90	0.03	0.01	1,156.53
Area	0.00	0.00	0.00	0.00
Water Use	232.81	1.01	0.02	261.64
Waste Disposal	33.48	1.98	0.00	75.02
Project Total	2,911.75	3.06	0.03	2,985.64
Threshold	---	---	---	10,000
Exceeds Threshold?	---	---	---	No

Notes:
1. Because different gases have different conversion factors, totals may not equal.

Source: Environmental Impact Sciences

5.7 Potential to Conflict with an Applicable Plan, Policy, or Regulation Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases

- **Less than Significant Impact**. An impact can also be potentially significant if the project does not comply with the applicable plans necessary for the reduction of GHGs. Like air quality impacts, projects that generate de minimus levels (i.e., less than 10,000 Mtons per year) and do not result in a significant impact or can be mitigated to less than significant would be deemed to be in compliance of the local policies with respect to GHG.

  The project replaces the existing structures and the new land uses would be required to comply with Title 24 standards increasing their energy efficiency and reducing GHG emissions associated with energy use. In addition, the project is subject to the requirements of Assembly Bill (AB) 32 and the requirements set forth therein. Compliance with existing statutes, regulations, and standards does not constitute mitigation under CEQA.

  Construction

  Construction is estimated to generate about 467.20 Mtons of CO_2e during the peak year. This value is below the 10,000-Mton threshold value and the cumulative impact to climate change is less than significant. As such, construction would not conflict with existing plans and policies. If the entirety of the construction were to take place simultaneously within one year, the combined total is calculated at 526.67 Mtons of CO_2e (467.20 + 59.47) and remains under the 10,000 Mtons per year threshold.

  Site Operations

  The project would upgrade the existing land uses to no less than Title 24 requirements. With the removal of the existing land uses, the operational total is estimated at about

2,985.64 Mtons of CO_2e on an annual basis and is less than the 10,000-Mton per year threshold suggested by the SCAQMD. As such, the impact is less than significant.

6.0 REFERENCES

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- South Coast Air Quality Management District, Sample Construction Scenarios for Projects Less than Five Acres in Size, February 2005.
- South Coast Air Quality Management District, CEQA Air Quality Handbook, April 1993.

7.0 APPENDICES

Appendix A	CalEEMod Model Results for Arrow Highway Business Park Winter Emissions
Appendix B	CalEEMod Model Results for Arrow Highway Business Park Summer Emissions
Appendix C	CalEEMod Model Results for Arrow Highway Business Park Annual Emissions
Appendix D	CalEEMod Model Results for Arrow Highway Business Park Winter Emissions with Mitigation
Appendix E	Emfac2011 to CalEEMod Idle Conversion

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Appendix A

CalEEMod Model Results for Arrow Highway Business Park Winter Emissions

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Arrow Highway Industrial

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Industrial Park	133.00	1000sqft	6.25	133,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2016
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage based on parcel area.

Trips and VMT - Includes 50 trucks (by default) for the removal of the structure and 152 trucks (calculated) for the removal of the asphalt.

Demolition -

Vehicle Trips - Weekday trip rate based on transportation analysis.

Vechicle Emission Factors - Ratios revised to refect 33% trucks.

Vechicle Emission Factors - Ratios revised to reflect 33% trucks.

Vechicle Emission Factors - Ratios revised to reflect 33% trucks.

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	3.05	6.25
tblProjectCharacteristics	OperationalYear	2014	2016
tblTripsAndVMT	HaulingTripNumber	50.00	202.00
tblVehicleEF	HHD	0.03	0.12
tblVehicleEF	HHD	0.03	0.12
tblVehicleEF	HHD	0.03	0.12
tblVehicleEF	LDA	0.53	0.40
tblVehicleEF	LDA	0.53	0.40
tblVehicleEF	LDA	0.53	0.40
tblVehicleEF	LDT1	0.06	0.04
tblVehicleEF	LDT1	0.06	0.04
tblVehicleEF	LDT1	0.06	0.04
tblVehicleEF	LDT2	0.18	0.13
tblVehicleEF	LDT2	0.18	0.13
tblVehicleEF	LDT2	0.18	0.13
tblVehicleEF	LHD1	0.04	0.12
tblVehicleEF	LHD1	0.04	0.12
tblVehicleEF	LHD1	0.04	0.12
tblVehicleEF	LHD2	6.2830e-003	0.02
tblVehicleEF	LHD2	6.2830e-003	0.02
tblVehicleEF	LHD2	6.2830e-003	0.02
tblVehicleEF	MCY	3.6910e-003	2.8000e-003
tblVehicleEF	MCY	3.6910e-003	2.8000e-003
tblVehicleEF	MCY	3.6910e-003	2.8000e-003
tblVehicleEF	MDV	0.13	0.09
tblVehicleEF	MDV	0.13	0.09
tblVehicleEF	MDV	0.13	0.09

tblVehicleEF	MH	1.6550e-003	5.2000e-003
tblVehicleEF	MH	1.6550e-003	5.2000e-003
tblVehicleEF	MH	1.6550e-003	5.2000e-003
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	OBUS	2.4530e-003	9.4000e-003
tblVehicleEF	OBUS	2.4530e-003	9.4000e-003
tblVehicleEF	OBUS	2.4530e-003	9.4000e-003
tblVehicleEF	SBUS	5.4300e-004	1.5000e-003
tblVehicleEF	SBUS	5.4300e-004	1.5000e-003
tblVehicleEF	SBUS	5.4300e-004	1.5000e-003
tblVehicleEF	UBUS	3.1570e-003	9.7000e-003
tblVehicleEF	UBUS	3.1570e-003	9.7000e-003
tblVehicleEF	UBUS	3.1570e-003	9.7000e-003
tblVehicleTrips	WD_TR	6.96	5.64

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	5.3534	57.0134	43.9286	0.0495	18.2675	3.0903	21.3578	9.9840	2.8431	12.8271	0.0000	5,074.1126	5,074.1126	1.2406	0.0000	5,100.1650
2016	154.5332	30.8280	24.8775	0.0393	0.7632	2.0037	2.7669	0.2050	1.8819	2.0869	0.0000	3,799.3665	3,799.3665	0.7087	0.0000	3,814.2499
Total	**159.8866**	**87.8414**	**68.8061**	**0.0888**	**19.0306**	**5.0940**	**24.1246**	**10.1891**	**4.7249**	**14.9140**	**0.0000**	**8,873.4791**	**8,873.4791**	**1.9493**	**0.0000**	**8,914.4149**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	5.3534	57.0134	43.9286	0.0495	3.8596	3.0903	6.9499	2.0643	2.8431	4.9074	0.0000	5,074.1126	5,074.1126	1.2406	0.0000	5,100.1650
2016	154.5332	30.8280	24.8775	0.0393	0.7632	2.0037	2.7669	0.2050	1.8819	2.0869	0.0000	3,799.3665	3,799.3665	0.7087	0.0000	3,814.2499
Total	**159.8866**	**87.8414**	**68.8061**	**0.0888**	**4.6228**	**5.0940**	**9.7168**	**2.2694**	**4.7249**	**6.9943**	**0.0000**	**8,873.4790**	**8,873.4790**	**1.9493**	**0.0000**	**8,914.4149**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**75.71**	**0.00**	**59.72**	**77.73**	**0.00**	**53.10**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.4792	1.3000e-004	0.0139	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0291	0.0291	8.0000e-005		0.0308
Energy	0.0430	0.3905	0.3280	2.3400e-003		0.0297	0.0297		0.0297	0.0297		468.5544	468.5544	8.9800e-003	8.5900e-003	471.4059
Mobile	4.2797	27.3434	51.1272	0.1210	6.5723	0.3826	6.9550	1.7880	0.3519	2.1399		11,277.2514	11,277.2514	0.3254		11,284.0837
Total	**7.8018**	**27.7340**	**51.4692**	**0.1234**	**6.5723**	**0.4123**	**6.9847**	**1.7880**	**0.3816**	**2.1696**		**11,745.8349**	**11,745.8349**	**0.3344**	**8.5900e-003**	**11,755.5205**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.4792	1.3000e-004	0.0139	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0291	0.0291	8.0000e-005		0.0308
Energy	0.0430	0.3905	0.3280	2.3400e-003		0.0297	0.0297		0.0297	0.0297		468.5544	468.5544	8.9800e-003	8.5900e-003	471.4059
Mobile	4.2797	27.3434	51.1272	0.1210	6.5723	0.3826	6.9550	1.7880	0.3519	2.1399		11,277.2514	11,277.2514	0.3254		11,284.0837
Total	**7.8018**	**27.7340**	**51.4692**	**0.1234**	**6.5723**	**0.4123**	**6.9847**	**1.7880**	**0.3816**	**2.1696**		**11,745.8349**	**11,745.8349**	**0.3344**	**8.5900e-003**	**11,755.5205**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2015	1/28/2015	5	20	
2	Site Preparation	Site Preparation	1/29/2015	2/11/2015	5	10	
3	Grading	Grading	2/12/2015	3/11/2015	5	20	
4	Building Construction	Building Construction	3/12/2015	1/27/2016	5	230	
5	Paving	Paving	1/28/2016	2/24/2016	5	20	
6	Architectural Coating	Architectural Coating	2/25/2016	3/23/2016	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 199,500; Non-Residential Outdoor: 66,500 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	202.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	56.00	22.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	11.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

3.2 Demolition - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5414	0.0000	0.5414	0.0820	0.0000	0.0820			0.0000			0.0000
Off-Road	4.5083	48.3629	36.0738	0.0399		2.4508	2.4508		2.2858	2.2858		4,127.1934	4,127.1934	1.1188		4,150.6886
Total	**4.5083**	**48.3629**	**36.0738**	**0.0399**	**0.5414**	**2.4508**	**2.9922**	**0.0820**	**2.2858**	**2.3678**		**4,127.1934**	**4,127.1934**	**1.1188**		**4,150.6886**

3.2 Demolition - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2148	3.3175	2.5040	7.5400e-003	0.1759	0.0530	0.2289	0.0482	0.0488	0.0969		766.9031	766.9031	6.3200e-003		767.0359
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0771	0.1031	1.0807	2.0600e-003	0.1677	1.6800e-003	0.1693	0.0445	1.5300e-003	0.0460		180.0161	180.0161	0.0109		180.2447
Total	**0.2919**	**3.4206**	**3.5847**	**9.6000e-003**	**0.3435**	**0.0547**	**0.3982**	**0.0926**	**0.0503**	**0.1429**		**946.9192**	**946.9192**	**0.0172**		**947.2806**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1096	0.0000	0.1096	0.0166	0.0000	0.0166			0.0000			0.0000
Off-Road	4.5083	48.3629	36.0738	0.0399		2.4508	2.4508		2.2858	2.2858	0.0000	4,127.1934	4,127.1934	1.1188		4,150.6886
Total	**4.5083**	**48.3629**	**36.0738**	**0.0399**	**0.1096**	**2.4508**	**2.5604**	**0.0166**	**2.2858**	**2.3024**	**0.0000**	**4,127.1934**	**4,127.1934**	**1.1188**		**4,150.6886**

3.2 Demolition - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2148	3.3175	2.5040	7.5400e-003	0.1759	0.0530	0.2289	0.0482	0.0488	0.0969		766.9031	766.9031	6.3200e-003		767.0359
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0771	0.1031	1.0807	2.0600e-003	0.1677	1.6800e-003	0.1693	0.0445	1.5300e-003	0.0460		180.0161	180.0161	0.0109		180.2447
Total	**0.2919**	**3.4206**	**3.5847**	**9.6000e-003**	**0.3435**	**0.0547**	**0.3982**	**0.0926**	**0.0503**	**0.1429**		**946.9192**	**946.9192**	**0.0172**		**947.2806**

3.3 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2609	56.8897	42.6318	0.0391		3.0883	3.0883		2.8412	2.8412		4,111.7444	4,111.7444	1.2275		4,137.5225
Total	**5.2609**	**56.8897**	**42.6318**	**0.0391**	**18.0663**	**3.0883**	**21.1545**	**9.9307**	**2.8412**	**12.7719**		**4,111.7444**	**4,111.7444**	**1.2275**		**4,137.5225**

3.3 Site Preparation - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0925	0.1238	1.2968	2.4700e-003	0.2012	2.0100e-003	0.2032	0.0534	1.8400e-003	0.0552		216.0194	216.0194	0.0131		216.2936
Total	**0.0925**	**0.1238**	**1.2968**	**2.4700e-003**	**0.2012**	**2.0100e-003**	**0.2032**	**0.0534**	**1.8400e-003**	**0.0552**		**216.0194**	**216.0194**	**0.0131**		**216.2936**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.6584	0.0000	3.6584	2.0110	0.0000	2.0110			0.0000			0.0000
Off-Road	5.2609	56.8897	42.6318	0.0391		3.0883	3.0883		2.8412	2.8412	0.0000	4,111.7444	4,111.7444	1.2275		4,137.5224
Total	**5.2609**	**56.8897**	**42.6318**	**0.0391**	**3.6584**	**3.0883**	**6.7467**	**2.0110**	**2.8412**	**4.8522**	**0.0000**	**4,111.7444**	**4,111.7444**	**1.2275**		**4,137.5224**

3.3 Site Preparation - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0925	0.1238	1.2968	2.4700e-003	0.2012	2.0100e-003	0.2032	0.0534	1.8400e-003	0.0552		216.0194	216.0194	0.0131		216.2936
Total	**0.0925**	**0.1238**	**1.2968**	**2.4700e-003**	**0.2012**	**2.0100e-003**	**0.2032**	**0.0534**	**1.8400e-003**	**0.0552**		**216.0194**	**216.0194**	**0.0131**		**216.2936**

3.4 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	3.8327	40.4161	26.6731	0.0298		2.3284	2.3284		2.1421	2.1421		3,129.0158	3,129.0158	0.9341		3,148.6328
Total	**3.8327**	**40.4161**	**26.6731**	**0.0298**	**6.5523**	**2.3284**	**8.8807**	**3.3675**	**2.1421**	**5.5096**		**3,129.0158**	**3,129.0158**	**0.9341**		**3,148.6328**

3.4 Grading - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0771	0.1031	1.0807	2.0600e-003	0.1677	1.6800e-003	0.1693	0.0445	1.5300e-003	0.0460		180.0161	180.0161	0.0109		180.2447
Total	**0.0771**	**0.1031**	**1.0807**	**2.0600e-003**	**0.1677**	**1.6800e-003**	**0.1693**	**0.0445**	**1.5300e-003**	**0.0460**		**180.0161**	**180.0161**	**0.0109**		**180.2447**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.3269	0.0000	1.3269	0.6819	0.0000	0.6819			0.0000			0.0000
Off-Road	3.8327	40.4161	26.6731	0.0298		2.3284	2.3284		2.1421	2.1421	0.0000	3,129.0158	3,129.0158	0.9341		3,148.6328
Total	**3.8327**	**40.4161**	**26.6731**	**0.0298**	**1.3269**	**2.3284**	**3.6552**	**0.6819**	**2.1421**	**2.8240**	**0.0000**	**3,129.0158**	**3,129.0158**	**0.9341**		**3,148.6328**

3.4 Grading - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0771	0.1031	1.0807	2.0600e-003	0.1677	1.6800e-003	0.1693	0.0445	1.5300e-003	0.0460		180.0161	180.0161	0.0109		180.2447
Total	**0.0771**	**0.1031**	**1.0807**	**2.0600e-003**	**0.1677**	**1.6800e-003**	**0.1693**	**0.0445**	**1.5300e-003**	**0.0460**		**180.0161**	**180.0161**	**0.0109**		**180.2447**

3.5 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904		2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**		**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

3.5 Building Construction - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2331	2.2314	2.9349	4.8100e-003	0.1371	0.0369	0.1741	0.0390	0.0339	0.0730		485.7125	485.7125	4.0400e-003		485.7973
Worker	0.2878	0.3850	4.0346	7.6800e-003	0.6260	6.2500e-003	0.6322	0.1660	5.7300e-003	0.1717		672.0602	672.0602	0.0406		672.9135
Total	**0.5210**	**2.6164**	**6.9695**	**0.0125**	**0.7631**	**0.0432**	**0.8063**	**0.2050**	**0.0397**	**0.2447**		**1,157.7727**	**1,157.7727**	**0.0447**		**1,158.7109**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904	0.0000	2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**	**0.0000**	**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

3.5 Building Construction - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2331	2.2314	2.9349	4.8100e-003	0.1371	0.0369	0.1741	0.0390	0.0339	0.0730		485.7125	485.7125	4.0400e-003		485.7973
Worker	0.2878	0.3850	4.0346	7.6800e-003	0.6260	6.2500e-003	0.6322	0.1660	5.7300e-003	0.1717		672.0602	672.0602	0.0406		672.9135
Total	**0.5210**	**2.6164**	**6.9695**	**0.0125**	**0.7631**	**0.0432**	**0.8063**	**0.2050**	**0.0397**	**0.2447**		**1,157.7727**	**1,157.7727**	**0.0447**		**1,158.7109**

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485		2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**		**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

3.5 Building Construction - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2045	1.9735	2.7232	4.8000e-003	0.1372	0.0304	0.1676	0.0390	0.0280	0.0670		480.4626	480.4626	3.6600e-003		480.5395
Worker	0.2595	0.3481	3.6477	7.6800e-003	0.6260	5.9200e-003	0.6319	0.1660	5.4400e-003	0.1714		649.6174	649.6174	0.0375		650.4042
Total	**0.4640**	**2.3216**	**6.3709**	**0.0125**	**0.7632**	**0.0363**	**0.7995**	**0.2050**	**0.0334**	**0.2385**		**1,130.0801**	**1,130.0801**	**0.0411**		**1,130.9437**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485	0.0000	2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**	**0.0000**	**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

3.5 Building Construction - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2045	1.9735	2.7232	4.8000e-003	0.1372	0.0304	0.1676	0.0390	0.0280	0.0670		480.4626	480.4626	3.6600e-003		480.5395
Worker	0.2595	0.3481	3.6477	7.6800e-003	0.6260	5.9200e-003	0.6319	0.1660	5.4400e-003	0.1714		649.6174	649.6174	0.0375		650.4042
Total	**0.4640**	**2.3216**	**6.3709**	**0.0125**	**0.7632**	**0.0363**	**0.7995**	**0.2050**	**0.0334**	**0.2385**		**1,130.0801**	**1,130.0801**	**0.0411**		**1,130.9437**

3.6 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601		2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.0898**	**22.3859**	**14.8176**	**0.0223**		**1.2610**	**1.2610**		**1.1601**	**1.1601**		**2,316.3767**	**2,316.3767**	**0.6987**		**2,331.0495**

3.6 Paving - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0695	0.0932	0.9771	2.0600e-003	0.1677	1.5900e-003	0.1693	0.0445	1.4600e-003	0.0459		174.0047	174.0047	0.0100		174.2154
Total	**0.0695**	**0.0932**	**0.9771**	**2.0600e-003**	**0.1677**	**1.5900e-003**	**0.1693**	**0.0445**	**1.4600e-003**	**0.0459**		**174.0047**	**174.0047**	**0.0100**		**174.2154**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601	0.0000	2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.0898**	**22.3859**	**14.8176**	**0.0223**		**1.2610**	**1.2610**		**1.1601**	**1.1601**	**0.0000**	**2,316.3767**	**2,316.3767**	**0.6987**		**2,331.0495**

3.6 Paving - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0695	0.0932	0.9771	2.0600e-003	0.1677	1.5900e-003	0.1693	0.0445	1.4600e-003	0.0459		174.0047	174.0047	0.0100		174.2154
Total	**0.0695**	**0.0932**	**0.9771**	**2.0600e-003**	**0.1677**	**1.5900e-003**	**0.1693**	**0.0445**	**1.4600e-003**	**0.0459**		**174.0047**	**174.0047**	**0.0100**		**174.2154**

3.7 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	154.1138					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449
Total	**154.4822**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**		**281.4481**	**281.4481**	**0.0332**		**282.1449**

3.7 Architectural Coating - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0510	0.0684	0.7165	1.5100e-003	0.1230	1.1600e-003	0.1241	0.0326	1.0700e-003	0.0337		127.6034	127.6034	7.3600e-003		127.7580
Total	**0.0510**	**0.0684**	**0.7165**	**1.5100e-003**	**0.1230**	**1.1600e-003**	**0.1241**	**0.0326**	**1.0700e-003**	**0.0337**		**127.6034**	**127.6034**	**7.3600e-003**		**127.7580**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	154.1138					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332		282.1449
Total	**154.4822**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**	**0.0000**	**281.4481**	**281.4481**	**0.0332**		**282.1449**

3.7 Architectural Coating - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0510	0.0684	0.7165	1.5100e-003	0.1230	1.1600e-003	0.1241	0.0326	1.0700e-003	0.0337		127.6034	127.6034	7.3600e-003		127.7580
Total	**0.0510**	**0.0684**	**0.7165**	**1.5100e-003**	**0.1230**	**1.1600e-003**	**0.1241**	**0.0326**	**1.0700e-003**	**0.0337**		**127.6034**	**127.6034**	**7.3600e-003**		**127.7580**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.2797	27.3434	51.1272	0.1210	6.5723	0.3826	6.9550	1.7880	0.3519	2.1399		11,277.2514	11,277.2514	0.3254		11,284.0837
Unmitigated	4.2797	27.3434	51.1272	0.1210	6.5723	0.3826	6.9550	1.7880	0.3519	2.1399		11,277.2514	11,277.2514	0.3254		11,284.0837

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Industrial Park	750.00	331.17	97.09	2,373,782	2,373,782
Total	750.00	331.17	97.09	2,373,782	2,373,782

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Industrial Park	16.60	8.40	6.90	59.00	28.00	13.00	79	19	2

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.397500	0.043500	0.132700	0.093500	0.118500	0.019200	0.050000	0.116500	0.009400	0.009700	0.002800	0.001500	0.005200

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0430	0.3905	0.3280	2.3400e-003		0.0297	0.0297		0.0297	0.0297		468.5544	468.5544	8.9800e-003	8.5900e-003	471.4059
NaturalGas Unmitigated	0.0430	0.3905	0.3280	2.3400e-003		0.0297	0.0297		0.0297	0.0297		468.5544	468.5544	8.9800e-003	8.5900e-003	471.4059

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Industrial Park	3982.71	0.0430	0.3905	0.3280	2.3400e-003		0.0297	0.0297		0.0297	0.0297		468.5544	468.5544	8.9800e-003	8.5900e-003	471.4059
Total		**0.0430**	**0.3905**	**0.3280**	**2.3400e-003**		**0.0297**	**0.0297**		**0.0297**	**0.0297**		**468.5544**	**468.5544**	**8.9800e-003**	**8.5900e-003**	**471.4059**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Industrial Park	3.98271	0.0430	0.3905	0.3280	2.3400e-003		0.0297	0.0297		0.0297	0.0297		468.5544	468.5544	8.9800e-003	8.5900e-003	471.4059
Total		**0.0430**	**0.3905**	**0.3280**	**2.3400e-003**		**0.0297**	**0.0297**		**0.0297**	**0.0297**		**468.5544**	**468.5544**	**8.9800e-003**	**8.5900e-003**	**471.4059**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.4792	1.3000e-004	0.0139	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0291	0.0291	8.0000e-005		0.0308
Unmitigated	3.4792	1.3000e-004	0.0139	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0291	0.0291	8.0000e-005		0.0308

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.8445					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.6334					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3600e-003	1.3000e-004	0.0139	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0291	0.0291	8.0000e-005		0.0308
Total	**3.4792**	**1.3000e-004**	**0.0139**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**		**0.0291**	**0.0291**	**8.0000e-005**		**0.0308**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Consumer Products	2.6334					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3600e-003	1.3000e-004	0.0139	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0291	0.0291	8.0000e-005		0.0308
Architectural Coating	0.8445					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.4792**	**1.3000e-004**	**0.0139**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**		**0.0291**	**0.0291**	**8.0000e-005**		**0.0308**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Appendix B

CalEEMod Model Results for Arrow Highway Business Park Summer Emissions

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Arrow Highway Industrial

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Industrial Park	133.00	1000sqft	6.25	133,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2016
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage based on parcel area.

Trips and VMT - Includes 50 trucks (by default) for the removal of the structure and 152 trucks (calculated) for the removal of the asphalt.

Demolition -

Vehicle Trips - Weekday trip rate based on transportation analysis.

Vechicle Emission Factors - Ratios revised to refect 33% trucks.

Vechicle Emission Factors - Ratios revised to reflect 33% trucks.

Vechicle Emission Factors - Ratios revised to reflect 33% trucks.

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	3.05	6.25
tblProjectCharacteristics	OperationalYear	2014	2016
tblTripsAndVMT	HaulingTripNumber	50.00	202.00
tblVehicleEF	HHD	0.03	0.12
tblVehicleEF	HHD	0.03	0.12
tblVehicleEF	HHD	0.03	0.12
tblVehicleEF	LDA	0.53	0.40
tblVehicleEF	LDA	0.53	0.40
tblVehicleEF	LDA	0.53	0.40
tblVehicleEF	LDT1	0.06	0.04
tblVehicleEF	LDT1	0.06	0.04
tblVehicleEF	LDT1	0.06	0.04
tblVehicleEF	LDT2	0.18	0.13
tblVehicleEF	LDT2	0.18	0.13
tblVehicleEF	LDT2	0.18	0.13
tblVehicleEF	LHD1	0.04	0.12
tblVehicleEF	LHD1	0.04	0.12
tblVehicleEF	LHD1	0.04	0.12
tblVehicleEF	LHD2	6.2830e-003	0.02
tblVehicleEF	LHD2	6.2830e-003	0.02
tblVehicleEF	LHD2	6.2830e-003	0.02
tblVehicleEF	MCY	3.6910e-003	2.8000e-003
tblVehicleEF	MCY	3.6910e-003	2.8000e-003
tblVehicleEF	MCY	3.6910e-003	2.8000e-003
tblVehicleEF	MDV	0.13	0.09
tblVehicleEF	MDV	0.13	0.09
tblVehicleEF	MDV	0.13	0.09

tblVehicleEF	MH	1.6550e-003	5.2000e-003
tblVehicleEF	MH	1.6550e-003	5.2000e-003
tblVehicleEF	MH	1.6550e-003	5.2000e-003
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	OBUS	2.4530e-003	9.4000e-003
tblVehicleEF	OBUS	2.4530e-003	9.4000e-003
tblVehicleEF	OBUS	2.4530e-003	9.4000e-003
tblVehicleEF	SBUS	5.4300e-004	1.5000e-003
tblVehicleEF	SBUS	5.4300e-004	1.5000e-003
tblVehicleEF	SBUS	5.4300e-004	1.5000e-003
tblVehicleEF	UBUS	3.1570e-003	9.7000e-003
tblVehicleEF	UBUS	3.1570e-003	9.7000e-003
tblVehicleEF	UBUS	3.1570e-003	9.7000e-003
tblVehicleTrips	WD_TR	6.96	5.64

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	5.3497	57.0013	44.0081	0.0496	18.2675	3.0903	21.3578	9.9840	2.8431	12.8271	0.0000	5,086.6092	5,086.6092	1.2406	0.0000	5,112.6616
2016	154.5312	30.7454	24.6280	0.0398	0.7632	2.0034	2.7666	0.2050	1.8816	2.0866	0.0000	3,842.0237	3,842.0237	0.7087	0.0000	3,856.9071
Total	**159.8809**	**87.7467**	**68.6361**	**0.0894**	**19.0306**	**5.0937**	**24.1243**	**10.1891**	**4.7246**	**14.9137**	**0.0000**	**8,928.6329**	**8,928.6329**	**1.9493**	**0.0000**	**8,969.5687**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	5.3497	57.0013	44.0081	0.0496	3.8596	3.0903	6.9499	2.0643	2.8431	4.9074	0.0000	5,086.6092	5,086.6092	1.2406	0.0000	5,112.6616
2016	154.5312	30.7454	24.6280	0.0398	0.7632	2.0034	2.7666	0.2050	1.8816	2.0866	0.0000	3,842.0237	3,842.0237	0.7087	0.0000	3,856.9071
Total	**159.8809**	**87.7467**	**68.6361**	**0.0894**	**4.6228**	**5.0937**	**9.7165**	**2.2694**	**4.7246**	**6.9940**	**0.0000**	**8,928.6329**	**8,928.6329**	**1.9493**	**0.0000**	**8,969.5687**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**75.71**	**0.00**	**59.72**	**77.73**	**0.00**	**53.10**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.4792	1.3000e-004	0.0139	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0291	0.0291	8.0000e-005		0.0308
Energy	0.0430	0.3905	0.3280	2.3400e-003		0.0297	0.0297		0.0297	0.0297		468.5544	468.5544	8.9800e-003	8.5900e-003	471.4059
Mobile	4.0628	26.2615	48.7257	0.1244	6.5723	0.3809	6.9532	1.7880	0.3503	2.1383		11,572.8600	11,572.8600	0.3246		11,579.6768
Total	**7.5850**	**26.6521**	**49.0676**	**0.1268**	**6.5723**	**0.4106**	**6.9830**	**1.7880**	**0.3800**	**2.1680**		**12,041.4435**	**12,041.4435**	**0.3337**	**8.5900e-003**	**12,051.1135**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.4792	1.3000e-004	0.0139	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0291	0.0291	8.0000e-005		0.0308
Energy	0.0430	0.3905	0.3280	2.3400e-003		0.0297	0.0297		0.0297	0.0297		468.5544	468.5544	8.9800e-003	8.5900e-003	471.4059
Mobile	4.0628	26.2615	48.7257	0.1244	6.5723	0.3809	6.9532	1.7880	0.3503	2.1383		11,572.8600	11,572.8600	0.3246		11,579.6768
Total	**7.5850**	**26.6521**	**49.0676**	**0.1268**	**6.5723**	**0.4106**	**6.9830**	**1.7880**	**0.3800**	**2.1680**		**12,041.4435**	**12,041.4435**	**0.3337**	**8.5900e-003**	**12,051.1135**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2015	1/28/2015	5	20	
2	Site Preparation	Site Preparation	1/29/2015	2/11/2015	5	10	
3	Grading	Grading	2/12/2015	3/11/2015	5	20	
4	Building Construction	Building Construction	3/12/2015	1/27/2016	5	230	
5	Paving	Paving	1/28/2016	2/24/2016	5	20	
6	Architectural Coating	Architectural Coating	2/25/2016	3/23/2016	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 199,500; Non-Residential Outdoor: 66,500 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	202.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	56.00	22.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	11.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

3.2 Demolition - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5414	0.0000	0.5414	0.0820	0.0000	0.0820			0.0000			0.0000
Off-Road	4.5083	48.3629	36.0738	0.0399		2.4508	2.4508		2.2858	2.2858		4,127.1934	4,127.1934	1.1188		4,150.6886
Total	**4.5083**	**48.3629**	**36.0738**	**0.0399**	**0.5414**	**2.4508**	**2.9922**	**0.0820**	**2.2858**	**2.3678**		**4,127.1934**	**4,127.1934**	**1.1188**		**4,150.6886**

3.2 Demolition - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2022	3.2047	2.1847	7.5500e-003	0.1759	0.0528	0.2287	0.0482	0.0486	0.0967		768.7026	768.7026	6.2500e-003		768.8338
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0740	0.0930	1.1469	2.1800e-003	0.1677	1.6800e-003	0.1693	0.0445	1.5300e-003	0.0460		190.7132	190.7132	0.0109		190.9418
Total	**0.2761**	**3.2977**	**3.3316**	**9.7300e-003**	**0.3435**	**0.0545**	**0.3980**	**0.0926**	**0.0501**	**0.1427**		**959.4158**	**959.4158**	**0.0171**		**959.7756**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1096	0.0000	0.1096	0.0166	0.0000	0.0166			0.0000			0.0000
Off-Road	4.5083	48.3629	36.0738	0.0399		2.4508	2.4508		2.2858	2.2858	0.0000	4,127.1934	4,127.1934	1.1188		4,150.6886
Total	**4.5083**	**48.3629**	**36.0738**	**0.0399**	**0.1096**	**2.4508**	**2.5604**	**0.0166**	**2.2858**	**2.3024**	**0.0000**	**4,127.1934**	**4,127.1934**	**1.1188**		**4,150.6886**

3.2 Demolition - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2022	3.2047	2.1847	7.5500e-003	0.1759	0.0528	0.2287	0.0482	0.0486	0.0967		768.7026	768.7026	6.2500e-003		768.8338
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0740	0.0930	1.1469	2.1800e-003	0.1677	1.6800e-003	0.1693	0.0445	1.5300e-003	0.0460		190.7132	190.7132	0.0109		190.9418
Total	**0.2761**	**3.2977**	**3.3316**	**9.7300e-003**	**0.3435**	**0.0545**	**0.3980**	**0.0926**	**0.0501**	**0.1427**		**959.4158**	**959.4158**	**0.0171**		**959.7756**

3.3 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2609	56.8897	42.6318	0.0391		3.0883	3.0883		2.8412	2.8412		4,111.7444	4,111.7444	1.2275		4,137.5225
Total	**5.2609**	**56.8897**	**42.6318**	**0.0391**	**18.0663**	**3.0883**	**21.1545**	**9.9307**	**2.8412**	**12.7719**		**4,111.7444**	**4,111.7444**	**1.2275**		**4,137.5225**

3.3 Site Preparation - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0888	0.1116	1.3763	2.6200e-003	0.2012	2.0100e-003	0.2032	0.0534	1.8400e-003	0.0552		228.8559	228.8559	0.0131		229.1301
Total	**0.0888**	**0.1116**	**1.3763**	**2.6200e-003**	**0.2012**	**2.0100e-003**	**0.2032**	**0.0534**	**1.8400e-003**	**0.0552**		**228.8559**	**228.8559**	**0.0131**		**229.1301**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.6584	0.0000	3.6584	2.0110	0.0000	2.0110			0.0000			0.0000
Off-Road	5.2609	56.8897	42.6318	0.0391		3.0883	3.0883		2.8412	2.8412	0.0000	4,111.7444	4,111.7444	1.2275		4,137.5224
Total	**5.2609**	**56.8897**	**42.6318**	**0.0391**	**3.6584**	**3.0883**	**6.7467**	**2.0110**	**2.8412**	**4.8522**	**0.0000**	**4,111.7444**	**4,111.7444**	**1.2275**		**4,137.5224**

3.3 Site Preparation - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0888	0.1116	1.3763	2.6200e-003	0.2012	2.0100e-003	0.2032	0.0534	1.8400e-003	0.0552		228.8559	228.8559	0.0131		229.1301
Total	**0.0888**	**0.1116**	**1.3763**	**2.6200e-003**	**0.2012**	**2.0100e-003**	**0.2032**	**0.0534**	**1.8400e-003**	**0.0552**		**228.8559**	**228.8559**	**0.0131**		**229.1301**

3.4 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	3.8327	40.4161	26.6731	0.0298		2.3284	2.3284		2.1421	2.1421		3,129.0158	3,129.0158	0.9341		3,148.6328
Total	**3.8327**	**40.4161**	**26.6731**	**0.0298**	**6.5523**	**2.3284**	**8.8807**	**3.3675**	**2.1421**	**5.5096**		**3,129.0158**	**3,129.0158**	**0.9341**		**3,148.6328**

3.4 Grading - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0740	0.0930	1.1469	2.1800e-003	0.1677	1.6800e-003	0.1693	0.0445	1.5300e-003	0.0460		190.7132	190.7132	0.0109		190.9418
Total	**0.0740**	**0.0930**	**1.1469**	**2.1800e-003**	**0.1677**	**1.6800e-003**	**0.1693**	**0.0445**	**1.5300e-003**	**0.0460**		**190.7132**	**190.7132**	**0.0109**		**190.9418**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.3269	0.0000	1.3269	0.6819	0.0000	0.6819			0.0000			0.0000
Off-Road	3.8327	40.4161	26.6731	0.0298		2.3284	2.3284		2.1421	2.1421	0.0000	3,129.0158	3,129.0158	0.9341		3,148.6328
Total	**3.8327**	**40.4161**	**26.6731**	**0.0298**	**1.3269**	**2.3284**	**3.6552**	**0.6819**	**2.1421**	**2.8240**	**0.0000**	**3,129.0158**	**3,129.0158**	**0.9341**		**3,148.6328**

3.4 Grading - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0740	0.0930	1.1469	2.1800e-003	0.1677	1.6800e-003	0.1693	0.0445	1.5300e-003	0.0460		190.7132	190.7132	0.0109		190.9418
Total	**0.0740**	**0.0930**	**1.1469**	**2.1800e-003**	**0.1677**	**1.6800e-003**	**0.1693**	**0.0445**	**1.5300e-003**	**0.0460**		**190.7132**	**190.7132**	**0.0109**		**190.9418**

3.5 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904		2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**		**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

3.5 Building Construction - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2107	2.1754	2.4426	4.8400e-003	0.1371	0.0365	0.1736	0.0390	0.0335	0.0725		489.7613	489.7613	3.9300e-003		489.8438
Worker	0.2762	0.3472	4.2819	8.1500e-003	0.6260	6.2500e-003	0.6322	0.1660	5.7300e-003	0.1717		711.9960	711.9960	0.0406		712.8493
Total	**0.4868**	**2.5225**	**6.7244**	**0.0130**	**0.7631**	**0.0427**	**0.8058**	**0.2050**	**0.0393**	**0.2443**		**1,201.7573**	**1,201.7573**	**0.0446**		**1,202.6932**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904	0.0000	2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**	**0.0000**	**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

3.5 Building Construction - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2107	2.1754	2.4426	4.8400e-003	0.1371	0.0365	0.1736	0.0390	0.0335	0.0725		489.7613	489.7613	3.9300e-003		489.8438
Worker	0.2762	0.3472	4.2819	8.1500e-003	0.6260	6.2500e-003	0.6322	0.1660	5.7300e-003	0.1717		711.9960	711.9960	0.0406		712.8493
Total	**0.4868**	**2.5225**	**6.7244**	**0.0130**	**0.7631**	**0.0427**	**0.8058**	**0.2050**	**0.0393**	**0.2443**		**1,201.7573**	**1,201.7573**	**0.0446**		**1,202.6932**

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485		2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**		**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

3.5 Building Construction - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1854	1.9252	2.2367	4.8300e-003	0.1372	0.0301	0.1673	0.0390	0.0277	0.0667		484.4854	484.4854	3.5600e-003		484.5600
Worker	0.2494	0.3139	3.8847	8.1400e-003	0.6260	5.9200e-003	0.6319	0.1660	5.4400e-003	0.1714		688.2519	688.2519	0.0375		689.0387
Total	**0.4348**	**2.2391**	**6.1214**	**0.0130**	**0.7632**	**0.0360**	**0.7992**	**0.2050**	**0.0331**	**0.2382**		**1,172.7373**	**1,172.7373**	**0.0410**		**1,173.5988**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485	0.0000	2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**	**0.0000**	**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

3.5 Building Construction - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1854	1.9252	2.2367	4.8300e-003	0.1372	0.0301	0.1673	0.0390	0.0277	0.0667		484.4854	484.4854	3.5600e-003		484.5600
Worker	0.2494	0.3139	3.8847	8.1400e-003	0.6260	5.9200e-003	0.6319	0.1660	5.4400e-003	0.1714		688.2519	688.2519	0.0375		689.0387
Total	**0.4348**	**2.2391**	**6.1214**	**0.0130**	**0.7632**	**0.0360**	**0.7992**	**0.2050**	**0.0331**	**0.2382**		**1,172.7373**	**1,172.7373**	**0.0410**		**1,173.5988**

3.6 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601		2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.0898**	**22.3859**	**14.8176**	**0.0223**		**1.2610**	**1.2610**		**1.1601**	**1.1601**		**2,316.3767**	**2,316.3767**	**0.6987**		**2,331.0495**

3.6 Paving - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0668	0.0841	1.0406	2.1800e-003	0.1677	1.5900e-003	0.1693	0.0445	1.4600e-003	0.0459		184.3532	184.3532	0.0100		184.5639
Total	**0.0668**	**0.0841**	**1.0406**	**2.1800e-003**	**0.1677**	**1.5900e-003**	**0.1693**	**0.0445**	**1.4600e-003**	**0.0459**		**184.3532**	**184.3532**	**0.0100**		**184.5639**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601	0.0000	2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.0898**	**22.3859**	**14.8176**	**0.0223**		**1.2610**	**1.2610**		**1.1601**	**1.1601**	**0.0000**	**2,316.3767**	**2,316.3767**	**0.6987**		**2,331.0495**

3.6 Paving - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0668	0.0841	1.0406	2.1800e-003	0.1677	1.5900e-003	0.1693	0.0445	1.4600e-003	0.0459		184.3532	184.3532	0.0100		184.5639
Total	**0.0668**	**0.0841**	**1.0406**	**2.1800e-003**	**0.1677**	**1.5900e-003**	**0.1693**	**0.0445**	**1.4600e-003**	**0.0459**		**184.3532**	**184.3532**	**0.0100**		**184.5639**

3.7 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	154.1138					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449
Total	**154.4822**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**		**281.4481**	**281.4481**	**0.0332**		**282.1449**

3.7 Architectural Coating - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0490	0.0617	0.7631	1.6000e-003	0.1230	1.1600e-003	0.1241	0.0326	1.0700e-003	0.0337		135.1923	135.1923	7.3600e-003		135.3469
Total	**0.0490**	**0.0617**	**0.7631**	**1.6000e-003**	**0.1230**	**1.1600e-003**	**0.1241**	**0.0326**	**1.0700e-003**	**0.0337**		**135.1923**	**135.1923**	**7.3600e-003**		**135.3469**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	154.1138					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332		282.1449
Total	**154.4822**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**	**0.0000**	**281.4481**	**281.4481**	**0.0332**		**282.1449**

3.7 Architectural Coating - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0490	0.0617	0.7631	1.6000e-003	0.1230	1.1600e-003	0.1241	0.0326	1.0700e-003	0.0337		135.1923	135.1923	7.3600e-003		135.3469
Total	**0.0490**	**0.0617**	**0.7631**	**1.6000e-003**	**0.1230**	**1.1600e-003**	**0.1241**	**0.0326**	**1.0700e-003**	**0.0337**		**135.1923**	**135.1923**	**7.3600e-003**		**135.3469**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.0628	26.2615	48.7257	0.1244	6.5723	0.3809	6.9532	1.7880	0.3503	2.1383		11,572.8600	11,572.8600	0.3246		11,579.6768
Unmitigated	4.0628	26.2615	48.7257	0.1244	6.5723	0.3809	6.9532	1.7880	0.3503	2.1383		11,572.8600	11,572.8600	0.3246		11,579.6768

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Industrial Park	750.00	331.17	97.09	2,373,782	2,373,782
Total	750.00	331.17	97.09	2,373,782	2,373,782

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Industrial Park	16.60	8.40	6.90	59.00	28.00	13.00	79	19	2

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.397500	0.043500	0.132700	0.093500	0.118500	0.019200	0.050000	0.116500	0.009400	0.009700	0.002800	0.001500	0.005200

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0430	0.3905	0.3280	2.3400e-003		0.0297	0.0297		0.0297	0.0297		468.5544	468.5544	8.9800e-003	8.5900e-003	471.4059
NaturalGas Unmitigated	0.0430	0.3905	0.3280	2.3400e-003		0.0297	0.0297		0.0297	0.0297		468.5544	468.5544	8.9800e-003	8.5900e-003	471.4059

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Industrial Park	3982.71	0.0430	0.3905	0.3280	2.3400e-003		0.0297	0.0297		0.0297	0.0297		468.5544	468.5544	8.9800e-003	8.5900e-003	471.4059
Total		**0.0430**	**0.3905**	**0.3280**	**2.3400e-003**		**0.0297**	**0.0297**		**0.0297**	**0.0297**		**468.5544**	**468.5544**	**8.9800e-003**	**8.5900e-003**	**471.4059**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Industrial Park	3.98271	0.0430	0.3905	0.3280	2.3400e-003		0.0297	0.0297		0.0297	0.0297		468.5544	468.5544	8.9800e-003	8.5900e-003	471.4059
Total		**0.0430**	**0.3905**	**0.3280**	**2.3400e-003**		**0.0297**	**0.0297**		**0.0297**	**0.0297**		**468.5544**	**468.5544**	**8.9800e-003**	**8.5900e-003**	**471.4059**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.4792	1.3000e-004	0.0139	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0291	0.0291	8.0000e-005		0.0308
Unmitigated	3.4792	1.3000e-004	0.0139	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0291	0.0291	8.0000e-005		0.0308

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.8445					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.6334					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3600e-003	1.3000e-004	0.0139	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0291	0.0291	8.0000e-005		0.0308
Total	**3.4792**	**1.3000e-004**	**0.0139**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**		**0.0291**	**0.0291**	**8.0000e-005**		**0.0308**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Consumer Products	2.6334					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3600e-003	1.3000e-004	0.0139	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0291	0.0291	8.0000e-005		0.0308
Architectural Coating	0.8445					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.4792**	**1.3000e-004**	**0.0139**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**		**0.0291**	**0.0291**	**8.0000e-005**		**0.0308**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Appendix C

CalEEMod Model Results for Arrow Highway Business Park Annual Emissions

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Arrow Highway Industrial

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Industrial Park	133.00	1000sqft	6.25	133,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2016
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage based on parcel area.

Trips and VMT - Includes 50 trucks (by default) for the removal of the structure and 152 trucks (calculated) for the removal of the asphalt.

Demolition -

Vehicle Trips - Weekday trip rate based on transportation analysis.

Vechicle Emission Factors - Ratios revised to refect 33% trucks.

Vechicle Emission Factors - Ratios revised to reflect 33% trucks.

Vechicle Emission Factors - Ratios revised to reflect 33% trucks.

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	3.05	6.25
tblProjectCharacteristics	OperationalYear	2014	2016
tblTripsAndVMT	HaulingTripNumber	50.00	202.00
tblVehicleEF	HHD	0.03	0.12
tblVehicleEF	HHD	0.03	0.12
tblVehicleEF	HHD	0.03	0.12
tblVehicleEF	LDA	0.53	0.40
tblVehicleEF	LDA	0.53	0.40
tblVehicleEF	LDA	0.53	0.40
tblVehicleEF	LDT1	0.06	0.04
tblVehicleEF	LDT1	0.06	0.04
tblVehicleEF	LDT1	0.06	0.04
tblVehicleEF	LDT2	0.18	0.13
tblVehicleEF	LDT2	0.18	0.13
tblVehicleEF	LDT2	0.18	0.13
tblVehicleEF	LHD1	0.04	0.12
tblVehicleEF	LHD1	0.04	0.12
tblVehicleEF	LHD1	0.04	0.12
tblVehicleEF	LHD2	6.2830e-003	0.02
tblVehicleEF	LHD2	6.2830e-003	0.02
tblVehicleEF	LHD2	6.2830e-003	0.02
tblVehicleEF	MCY	3.6910e-003	2.8000e-003
tblVehicleEF	MCY	3.6910e-003	2.8000e-003
tblVehicleEF	MCY	3.6910e-003	2.8000e-003
tblVehicleEF	MDV	0.13	0.09
tblVehicleEF	MDV	0.13	0.09
tblVehicleEF	MDV	0.13	0.09

tblVehicleEF	MH	1.6550e-003	5.2000e-003
tblVehicleEF	MH	1.6550e-003	5.2000e-003
tblVehicleEF	MH	1.6550e-003	5.2000e-003
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	OBUS	2.4530e-003	9.4000e-003
tblVehicleEF	OBUS	2.4530e-003	9.4000e-003
tblVehicleEF	OBUS	2.4530e-003	9.4000e-003
tblVehicleEF	SBUS	5.4300e-004	1.5000e-003
tblVehicleEF	SBUS	5.4300e-004	1.5000e-003
tblVehicleEF	SBUS	5.4300e-004	1.5000e-003
tblVehicleEF	UBUS	3.1570e-003	9.7000e-003
tblVehicleEF	UBUS	3.1570e-003	9.7000e-003
tblVehicleEF	UBUS	3.1570e-003	9.7000e-003
tblVehicleTrips	WD_TR	6.96	5.64

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.5522	4.6587	3.6035	5.1900e-003	0.2462	0.2917	0.5379	0.1070	0.2732	0.3802	0.0000	465.2387	465.2387	0.0934	0.0000	467.1992
2016	1.6034	0.5426	0.4203	6.6000e-004	9.9600e-003	0.0336	0.0436	2.6700e-003	0.0315	0.0341	0.0000	59.2012	59.2012	0.0129	0.0000	59.4712
Total	**2.1556**	**5.2013**	**4.0239**	**5.8500e-003**	**0.2562**	**0.3253**	**0.5815**	**0.1097**	**0.3046**	**0.4143**	**0.0000**	**524.4399**	**524.4399**	**0.1062**	**0.0000**	**526.6704**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.5522	4.6587	3.6035	5.1900e-003	0.1176	0.2917	0.4093	0.0399	0.2732	0.3131	0.0000	465.2383	465.2383	0.0934	0.0000	467.1988
2016	1.6034	0.5426	0.4203	6.6000e-004	9.9600e-003	0.0336	0.0436	2.6700e-003	0.0315	0.0341	0.0000	59.2012	59.2012	0.0129	0.0000	59.4712
Total	**2.1556**	**5.2013**	**4.0239**	**5.8500e-003**	**0.1276**	**0.3253**	**0.4529**	**0.0426**	**0.3046**	**0.3472**	**0.0000**	**524.4394**	**524.4394**	**0.1062**	**0.0000**	**526.6700**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**50.20**	**0.00**	**22.12**	**61.19**	**0.00**	**16.20**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.6349	2.0000e-005	1.7400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3000e-003	3.3000e-003	1.0000e-005	0.0000	3.5000e-003
Energy	7.8400e-003	0.0713	0.0599	4.3000e-004		5.4200e-003	5.4200e-003		5.4200e-003	5.4200e-003	0.0000	1,153.8970	1,153.8970	0.0269	6.6800e-003	1,156.5334
Mobile	0.5971	4.0320	7.3472	0.0177	0.9343	0.0552	0.9895	0.2546	0.0508	0.3054	0.0000	1,491.5566	1,491.5566	0.0426	0.0000	1,492.4521
Waste						0.0000	0.0000		0.0000	0.0000	33.4773	0.0000	33.4773	1.9785	0.0000	75.0247
Water						0.0000	0.0000		0.0000	0.0000	9.7575	223.0504	232.8079	1.0075	0.0248	261.6383
Total	**1.2398**	**4.1033**	**7.4088**	**0.0181**	**0.9343**	**0.0606**	**0.9949**	**0.2546**	**0.0562**	**0.3108**	**43.2348**	**2,868.5072**	**2,911.7421**	**3.0555**	**0.0314**	**2,985.6519**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.6349	2.0000e-005	1.7400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3000e-003	3.3000e-003	1.0000e-005	0.0000	3.5000e-003
Energy	7.8400e-003	0.0713	0.0599	4.3000e-004		5.4200e-003	5.4200e-003		5.4200e-003	5.4200e-003	0.0000	1,153.8970	1,153.8970	0.0269	6.6800e-003	1,156.5334
Mobile	0.5971	4.0320	7.3472	0.0177	0.9343	0.0552	0.9895	0.2546	0.0508	0.3054	0.0000	1,491.5566	1,491.5566	0.0426	0.0000	1,492.4521
Waste						0.0000	0.0000		0.0000	0.0000	33.4773	0.0000	33.4773	1.9785	0.0000	75.0247
Water						0.0000	0.0000		0.0000	0.0000	9.7575	223.0504	232.8079	1.0073	0.0247	261.6227
Total	**1.2398**	**4.1033**	**7.4088**	**0.0181**	**0.9343**	**0.0606**	**0.9949**	**0.2546**	**0.0562**	**0.3108**	**43.2348**	**2,868.5072**	**2,911.7421**	**3.0553**	**0.0314**	**2,985.6364**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.10**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2015	1/28/2015	5	20	
2	Site Preparation	Site Preparation	1/29/2015	2/11/2015	5	10	
3	Grading	Grading	2/12/2015	3/11/2015	5	20	
4	Building Construction	Building Construction	3/12/2015	1/27/2016	5	230	
5	Paving	Paving	1/28/2016	2/24/2016	5	20	
6	Architectural Coating	Architectural Coating	2/25/2016	3/23/2016	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 199,500; Non-Residential Outdoor: 66,500 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	202.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	56.00	22.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	11.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

3.2 Demolition - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.4100e-003	0.0000	5.4100e-003	8.2000e-004	0.0000	8.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0451	0.4836	0.3607	4.0000e-004		0.0245	0.0245		0.0229	0.0229	0.0000	37.4413	37.4413	0.0102	0.0000	37.6544
Total	**0.0451**	**0.4836**	**0.3607**	**4.0000e-004**	**5.4100e-003**	**0.0245**	**0.0299**	**8.2000e-004**	**0.0229**	**0.0237**	**0.0000**	**37.4413**	**37.4413**	**0.0102**	**0.0000**	**37.6544**

3.2 Demolition - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.1100e-003	0.0338	0.0244	8.0000e-005	1.7300e-003	5.3000e-004	2.2600e-003	4.7000e-004	4.9000e-004	9.6000e-004	0.0000	6.9667	6.9667	6.0000e-005	0.0000	6.9679
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.3000e-004	1.0600e-003	0.0110	2.0000e-005	1.6400e-003	2.0000e-005	1.6600e-003	4.4000e-004	2.0000e-005	4.5000e-004	0.0000	1.6593	1.6593	1.0000e-004	0.0000	1.6614
Total	**2.8400e-003**	**0.0348**	**0.0354**	**1.0000e-004**	**3.3700e-003**	**5.5000e-004**	**3.9200e-003**	**9.1000e-004**	**5.1000e-004**	**1.4100e-003**	**0.0000**	**8.6260**	**8.6260**	**1.6000e-004**	**0.0000**	**8.6293**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.1000e-003	0.0000	1.1000e-003	1.7000e-004	0.0000	1.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0451	0.4836	0.3607	4.0000e-004		0.0245	0.0245		0.0229	0.0229	0.0000	37.4412	37.4412	0.0102	0.0000	37.6544
Total	**0.0451**	**0.4836**	**0.3607**	**4.0000e-004**	**1.1000e-003**	**0.0245**	**0.0256**	**1.7000e-004**	**0.0229**	**0.0230**	**0.0000**	**37.4412**	**37.4412**	**0.0102**	**0.0000**	**37.6544**

3.2 Demolition - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.1100e-003	0.0338	0.0244	8.0000e-005	1.7300e-003	5.3000e-004	2.2600e-003	4.7000e-004	4.9000e-004	9.6000e-004	0.0000	6.9667	6.9667	6.0000e-005	0.0000	6.9679
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.3000e-004	1.0600e-003	0.0110	2.0000e-005	1.6400e-003	2.0000e-005	1.6600e-003	4.4000e-004	2.0000e-005	4.5000e-004	0.0000	1.6593	1.6593	1.0000e-004	0.0000	1.6614
Total	**2.8400e-003**	**0.0348**	**0.0354**	**1.0000e-004**	**3.3700e-003**	**5.5000e-004**	**3.9200e-003**	**9.1000e-004**	**5.1000e-004**	**1.4100e-003**	**0.0000**	**8.6260**	**8.6260**	**1.6000e-004**	**0.0000**	**8.6293**

3.3 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0263	0.2845	0.2132	2.0000e-004		0.0154	0.0154		0.0142	0.0142	0.0000	18.6506	18.6506	5.5700e-003	0.0000	18.7675
Total	**0.0263**	**0.2845**	**0.2132**	**2.0000e-004**	**0.0903**	**0.0154**	**0.1058**	**0.0497**	**0.0142**	**0.0639**	**0.0000**	**18.6506**	**18.6506**	**5.5700e-003**	**0.0000**	**18.7675**

3.3 Site Preparation - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4000e-004	6.4000e-004	6.6200e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.9956	0.9956	6.0000e-005	0.0000	0.9968
Total	**4.4000e-004**	**6.4000e-004**	**6.6200e-003**	**1.0000e-005**	**9.9000e-004**	**1.0000e-005**	**1.0000e-003**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**0.9956**	**0.9956**	**6.0000e-005**	**0.0000**	**0.9968**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0183	0.0000	0.0183	0.0101	0.0000	0.0101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0263	0.2845	0.2132	2.0000e-004		0.0154	0.0154		0.0142	0.0142	0.0000	18.6505	18.6505	5.5700e-003	0.0000	18.7675
Total	**0.0263**	**0.2845**	**0.2132**	**2.0000e-004**	**0.0183**	**0.0154**	**0.0337**	**0.0101**	**0.0142**	**0.0243**	**0.0000**	**18.6505**	**18.6505**	**5.5700e-003**	**0.0000**	**18.7675**

3.3 Site Preparation - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4000e-004	6.4000e-004	6.6200e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.9956	0.9956	6.0000e-005	0.0000	0.9968
Total	**4.4000e-004**	**6.4000e-004**	**6.6200e-003**	**1.0000e-005**	**9.9000e-004**	**1.0000e-005**	**1.0000e-003**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**0.9956**	**0.9956**	**6.0000e-005**	**0.0000**	**0.9968**

3.4 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0655	0.0000	0.0655	0.0337	0.0000	0.0337	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0383	0.4042	0.2667	3.0000e-004		0.0233	0.0233		0.0214	0.0214	0.0000	28.3860	28.3860	8.4700e-003	0.0000	28.5639
Total	**0.0383**	**0.4042**	**0.2667**	**3.0000e-004**	**0.0655**	**0.0233**	**0.0888**	**0.0337**	**0.0214**	**0.0551**	**0.0000**	**28.3860**	**28.3860**	**8.4700e-003**	**0.0000**	**28.5639**

3.4 Grading - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.3000e-004	1.0600e-003	0.0110	2.0000e-005	1.6400e-003	2.0000e-005	1.6600e-003	4.4000e-004	2.0000e-005	4.5000e-004	0.0000	1.6593	1.6593	1.0000e-004	0.0000	1.6614
Total	**7.3000e-004**	**1.0600e-003**	**0.0110**	**2.0000e-005**	**1.6400e-003**	**2.0000e-005**	**1.6600e-003**	**4.4000e-004**	**2.0000e-005**	**4.5000e-004**	**0.0000**	**1.6593**	**1.6593**	**1.0000e-004**	**0.0000**	**1.6614**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0133	0.0000	0.0133	6.8200e-003	0.0000	6.8200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0383	0.4042	0.2667	3.0000e-004		0.0233	0.0233		0.0214	0.0214	0.0000	28.3859	28.3859	8.4700e-003	0.0000	28.5639
Total	**0.0383**	**0.4042**	**0.2667**	**3.0000e-004**	**0.0133**	**0.0233**	**0.0366**	**6.8200e-003**	**0.0214**	**0.0282**	**0.0000**	**28.3859**	**28.3859**	**8.4700e-003**	**0.0000**	**28.5639**

3.4 Grading - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.3000e-004	1.0600e-003	0.0110	2.0000e-005	1.6400e-003	2.0000e-005	1.6600e-003	4.4000e-004	2.0000e-005	4.5000e-004	0.0000	1.6593	1.6593	1.0000e-004	0.0000	1.6614
Total	**7.3000e-004**	**1.0600e-003**	**0.0110**	**2.0000e-005**	**1.6400e-003**	**2.0000e-005**	**1.6600e-003**	**4.4000e-004**	**2.0000e-005**	**4.5000e-004**	**0.0000**	**1.6593**	**1.6593**	**1.0000e-004**	**0.0000**	**1.6614**

3.5 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3860	3.1682	1.9776	2.8300e-003		0.2233	0.2233		0.2100	0.2100	0.0000	257.4140	257.4140	0.0646	0.0000	258.7703
Total	**0.3860**	**3.1682**	**1.9776**	**2.8300e-003**		**0.2233**	**0.2233**		**0.2100**	**0.2100**	**0.0000**	**257.4140**	**257.4140**	**0.0646**	**0.0000**	**258.7703**

3.5 Building Construction - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0238	0.2401	0.2980	5.1000e-004	0.0142	3.8700e-003	0.0181	4.0600e-003	3.5600e-003	7.6100e-003	0.0000	46.7113	46.7113	3.8000e-004	0.0000	46.7193
Worker	0.0287	0.0417	0.4343	8.2000e-004	0.0647	6.6000e-004	0.0654	0.0172	6.0000e-004	0.0178	0.0000	65.3546	65.3546	3.8900e-003	0.0000	65.4363
Total	**0.0524**	**0.2818**	**0.7323**	**1.3300e-003**	**0.0790**	**4.5300e-003**	**0.0835**	**0.0213**	**4.1600e-003**	**0.0254**	**0.0000**	**112.0660**	**112.0660**	**4.2700e-003**	**0.0000**	**112.1556**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3860	3.1682	1.9776	2.8300e-003		0.2233	0.2233		0.2100	0.2100	0.0000	257.4137	257.4137	0.0646	0.0000	258.7700
Total	**0.3860**	**3.1682**	**1.9776**	**2.8300e-003**		**0.2233**	**0.2233**		**0.2100**	**0.2100**	**0.0000**	**257.4137**	**257.4137**	**0.0646**	**0.0000**	**258.7700**

3.5 Building Construction - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0238	0.2401	0.2980	5.1000e-004	0.0142	3.8700e-003	0.0181	4.0600e-003	3.5600e-003	7.6100e-003	0.0000	46.7113	46.7113	3.8000e-004	0.0000	46.7193
Worker	0.0287	0.0417	0.4343	8.2000e-004	0.0647	6.6000e-004	0.0654	0.0172	6.0000e-004	0.0178	0.0000	65.3546	65.3546	3.8900e-003	0.0000	65.4363
Total	**0.0524**	**0.2818**	**0.7323**	**1.3300e-003**	**0.0790**	**4.5300e-003**	**0.0835**	**0.0213**	**4.1600e-003**	**0.0254**	**0.0000**	**112.0660**	**112.0660**	**4.2700e-003**	**0.0000**	**112.1556**

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0324	0.2708	0.1758	2.5000e-004		0.0187	0.0187		0.0176	0.0176	0.0000	23.0046	23.0046	5.7100e-003	0.0000	23.1244
Total	**0.0324**	**0.2708**	**0.1758**	**2.5000e-004**		**0.0187**	**0.0187**		**0.0176**	**0.0176**	**0.0000**	**23.0046**	**23.0046**	**5.7100e-003**	**0.0000**	**23.1244**

3.5 Building Construction - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.8800e-003	0.0191	0.0248	5.0000e-005	1.2800e-003	2.9000e-004	1.5700e-003	3.7000e-004	2.6000e-004	6.3000e-004	0.0000	4.1609	4.1609	3.0000e-005	0.0000	4.1615
Worker	2.3200e-003	3.3900e-003	0.0354	7.0000e-005	5.8300e-003	6.0000e-005	5.8900e-003	1.5500e-003	5.0000e-005	1.6000e-003	0.0000	5.6886	5.6886	3.2000e-004	0.0000	5.6954
Total	**4.2000e-003**	**0.0225**	**0.0602**	**1.2000e-004**	**7.1100e-003**	**3.5000e-004**	**7.4600e-003**	**1.9200e-003**	**3.1000e-004**	**2.2300e-003**	**0.0000**	**9.8494**	**9.8494**	**3.5000e-004**	**0.0000**	**9.8569**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0324	0.2708	0.1758	2.5000e-004		0.0187	0.0187		0.0176	0.0176	0.0000	23.0046	23.0046	5.7100e-003	0.0000	23.1244
Total	**0.0324**	**0.2708**	**0.1758**	**2.5000e-004**		**0.0187**	**0.0187**		**0.0176**	**0.0176**	**0.0000**	**23.0046**	**23.0046**	**5.7100e-003**	**0.0000**	**23.1244**

3.5 Building Construction - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.8800e-003	0.0191	0.0248	5.0000e-005	1.2800e-003	2.9000e-004	1.5700e-003	3.7000e-004	2.6000e-004	6.3000e-004	0.0000	4.1609	4.1609	3.0000e-005	0.0000	4.1615
Worker	2.3200e-003	3.3900e-003	0.0354	7.0000e-005	5.8300e-003	6.0000e-005	5.8900e-003	1.5500e-003	5.0000e-005	1.6000e-003	0.0000	5.6886	5.6886	3.2000e-004	0.0000	5.6954
Total	**4.2000e-003**	**0.0225**	**0.0602**	**1.2000e-004**	**7.1100e-003**	**3.5000e-004**	**7.4600e-003**	**1.9200e-003**	**3.1000e-004**	**2.2300e-003**	**0.0000**	**9.8494**	**9.8494**	**3.5000e-004**	**0.0000**	**9.8569**

3.6 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0209	0.2239	0.1482	2.2000e-004		0.0126	0.0126		0.0116	0.0116	0.0000	21.0138	21.0138	6.3400e-003	0.0000	21.1469
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0209**	**0.2239**	**0.1482**	**2.2000e-004**		**0.0126**	**0.0126**		**0.0116**	**0.0116**	**0.0000**	**21.0138**	**21.0138**	**6.3400e-003**	**0.0000**	**21.1469**

3.6 Paving - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.6000e-004	9.6000e-004	9.9800e-003	2.0000e-005	1.6400e-003	2.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.6039	1.6039	9.0000e-005	0.0000	1.6058
Total	**6.6000e-004**	**9.6000e-004**	**9.9800e-003**	**2.0000e-005**	**1.6400e-003**	**2.0000e-005**	**1.6600e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.6039**	**1.6039**	**9.0000e-005**	**0.0000**	**1.6058**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0209	0.2239	0.1482	2.2000e-004		0.0126	0.0126		0.0116	0.0116	0.0000	21.0138	21.0138	6.3400e-003	0.0000	21.1469
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0209**	**0.2239**	**0.1482**	**2.2000e-004**		**0.0126**	**0.0126**		**0.0116**	**0.0116**	**0.0000**	**21.0138**	**21.0138**	**6.3400e-003**	**0.0000**	**21.1469**

3.6 Paving - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.6000e-004	9.6000e-004	9.9800e-003	2.0000e-005	1.6400e-003	2.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.6039	1.6039	9.0000e-005	0.0000	1.6058
Total	**6.6000e-004**	**9.6000e-004**	**9.9800e-003**	**2.0000e-005**	**1.6400e-003**	**2.0000e-005**	**1.6600e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.6039**	**1.6039**	**9.0000e-005**	**0.0000**	**1.6058**

3.7 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.5411					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6800e-003	0.0237	0.0188	3.0000e-005		1.9700e-003	1.9700e-003		1.9700e-003	1.9700e-003	0.0000	2.5533	2.5533	3.0000e-004	0.0000	2.5596
Total	**1.5448**	**0.0237**	**0.0188**	**3.0000e-005**		**1.9700e-003**	**1.9700e-003**		**1.9700e-003**	**1.9700e-003**	**0.0000**	**2.5533**	**2.5533**	**3.0000e-004**	**0.0000**	**2.5596**

3.7 Architectural Coating - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.8000e-004	7.0000e-004	7.3200e-003	2.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.1762	1.1762	7.0000e-005	0.0000	1.1776
Total	**4.8000e-004**	**7.0000e-004**	**7.3200e-003**	**2.0000e-005**	**1.2100e-003**	**1.0000e-005**	**1.2200e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.1762**	**1.1762**	**7.0000e-005**	**0.0000**	**1.1776**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.5411					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6800e-003	0.0237	0.0188	3.0000e-005		1.9700e-003	1.9700e-003		1.9700e-003	1.9700e-003	0.0000	2.5533	2.5533	3.0000e-004	0.0000	2.5596
Total	**1.5448**	**0.0237**	**0.0188**	**3.0000e-005**		**1.9700e-003**	**1.9700e-003**		**1.9700e-003**	**1.9700e-003**	**0.0000**	**2.5533**	**2.5533**	**3.0000e-004**	**0.0000**	**2.5596**

3.7 Architectural Coating - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.8000e-004	7.0000e-004	7.3200e-003	2.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.1762	1.1762	7.0000e-005	0.0000	1.1776
Total	**4.8000e-004**	**7.0000e-004**	**7.3200e-003**	**2.0000e-005**	**1.2100e-003**	**1.0000e-005**	**1.2200e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.1762**	**1.1762**	**7.0000e-005**	**0.0000**	**1.1776**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.5971	4.0320	7.3472	0.0177	0.9343	0.0552	0.9895	0.2546	0.0508	0.3054	0.0000	1,491.5566	1,491.5566	0.0426	0.0000	1,492.4521
Unmitigated	0.5971	4.0320	7.3472	0.0177	0.9343	0.0552	0.9895	0.2546	0.0508	0.3054	0.0000	1,491.5566	1,491.5566	0.0426	0.0000	1,492.4521

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Industrial Park	750.00	331.17	97.09	2,373,782	2,373,782
Total	750.00	331.17	97.09	2,373,782	2,373,782

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Industrial Park	16.60	8.40	6.90	59.00	28.00	13.00	79	19	2

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.397500	0.043500	0.132700	0.093500	0.118500	0.019200	0.050000	0.116500	0.009400	0.009700	0.002800	0.001500	0.005200

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,076.3226	1,076.3226	0.0254	5.2600e-003	1,078.4868
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,076.3226	1,076.3226	0.0254	5.2600e-003	1,078.4868
NaturalGas Mitigated	7.8400e-003	0.0713	0.0599	4.3000e-004		5.4200e-003	5.4200e-003		5.4200e-003	5.4200e-003	0.0000	77.5744	77.5744	1.4900e-003	1.4200e-003	78.0465
NaturalGas Unmitigated	7.8400e-003	0.0713	0.0599	4.3000e-004		5.4200e-003	5.4200e-003		5.4200e-003	5.4200e-003	0.0000	77.5744	77.5744	1.4900e-003	1.4200e-003	78.0465

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Industrial Park	1.45369e+006	7.8400e-003	0.0713	0.0599	4.3000e-004		5.4200e-003	5.4200e-003		5.4200e-003	5.4200e-003	0.0000	77.5744	77.5744	1.4900e-003	1.4200e-003	78.0465
Total		**7.8400e-003**	**0.0713**	**0.0599**	**4.3000e-004**		**5.4200e-003**	**5.4200e-003**		**5.4200e-003**	**5.4200e-003**	**0.0000**	**77.5744**	**77.5744**	**1.4900e-003**	**1.4200e-003**	**78.0465**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Industrial Park	1.45369e+006	7.8400e-003	0.0713	0.0599	4.3000e-004		5.4200e-003	5.4200e-003		5.4200e-003	5.4200e-003	0.0000	77.5744	77.5744	1.4900e-003	1.4200e-003	78.0465
Total		**7.8400e-003**	**0.0713**	**0.0599**	**4.3000e-004**		**5.4200e-003**	**5.4200e-003**		**5.4200e-003**	**5.4200e-003**	**0.0000**	**77.5744**	**77.5744**	**1.4900e-003**	**1.4200e-003**	**78.0465**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Industrial Park	1.93249e+006	1,076.3226	0.0254	5.2600e-003	1,078.4868
Total		**1,076.3226**	**0.0254**	**5.2600e-003**	**1,078.4868**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Industrial Park	1.93249e+006	1,076.3226	0.0254	5.2600e-003	1,078.4868
Total		**1,076.3226**	**0.0254**	**5.2600e-003**	**1,078.4868**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.6349	2.0000e-005	1.7400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3000e-003	3.3000e-003	1.0000e-005	0.0000	3.5000e-003
Unmitigated	0.6349	2.0000e-005	1.7400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3000e-003	3.3000e-003	1.0000e-005	0.0000	3.5000e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1541					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4806					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.7000e-004	2.0000e-005	1.7400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3000e-003	3.3000e-003	1.0000e-005	0.0000	3.5000e-003
Total	**0.6349**	**2.0000e-005**	**1.7400e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.3000e-003**	**3.3000e-003**	**1.0000e-005**	**0.0000**	**3.5000e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1541					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4806					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.7000e-004	2.0000e-005	1.7400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3000e-003	3.3000e-003	1.0000e-005	0.0000	3.5000e-003
Total	**0.6349**	**2.0000e-005**	**1.7400e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.3000e-003**	**3.3000e-003**	**1.0000e-005**	**0.0000**	**3.5000e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	232.8079	1.0073	0.0247	261.6227
Unmitigated	232.8079	1.0075	0.0248	261.6383

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Industrial Park	30.7563 / 0	232.8079	1.0075	0.0248	261.6383
Total		**232.8079**	**1.0075**	**0.0248**	**261.6383**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Industrial Park	30.7563 / 0	232.8079	1.0073	0.0247	261.6227
Total		**232.8079**	**1.0073**	**0.0247**	**261.6227**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	33.4773	1.9785	0.0000	75.0247
Unmitigated	33.4773	1.9785	0.0000	75.0247

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Industrial Park	164.92	33.4773	1.9785	0.0000	75.0247
Total		**33.4773**	**1.9785**	**0.0000**	**75.0247**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Industrial Park	164.92	33.4773	1.9785	0.0000	75.0247
Total		**33.4773**	**1.9785**	**0.0000**	**75.0247**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Appendix D

Emfac2011 to CalEEMod Idle Conversion

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Arrow Highway Industrial

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Industrial Park	133.00	1000sqft	6.25	133,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2016
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage based on parcel area.

Trips and VMT - Includes 50 trucks (by default) for the removal of the structure and 152 trucks (calculated) for the removal of the asphalt.

Demolition -

Vehicle Trips - Weekday trip rate based on transportation analysis.

Vechicle Emission Factors - Ratios revised to reflect 33% trucks.

Vechicle Emission Factors - Ratios revised to reflect 33% trucks.

Vechicle Emission Factors - Ratios revised to reflect 33% trucks.

Construction Off-road Equipment Mitigation - 61% Dust control for three times daily watering.
Level 1 Diesel Particulate filters on Rubber Tired Dozers.

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	DPF	No Change	Level 1
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblLandUse	LotAcreage	3.05	6.25
tblProjectCharacteristics	OperationalYear	2014	2016
tblTripsAndVMT	HaulingTripNumber	50.00	202.00
tblVehicleEF	HHD	0.03	0.12
tblVehicleEF	HHD	0.03	0.12
tblVehicleEF	HHD	0.03	0.12
tblVehicleEF	LDA	0.53	0.40
tblVehicleEF	LDA	0.53	0.40
tblVehicleEF	LDA	0.53	0.40
tblVehicleEF	LDT1	0.06	0.04
tblVehicleEF	LDT1	0.06	0.04
tblVehicleEF	LDT1	0.06	0.04
tblVehicleEF	LDT2	0.18	0.13
tblVehicleEF	LDT2	0.18	0.13
tblVehicleEF	LDT2	0.18	0.13
tblVehicleEF	LHD1	0.04	0.12
tblVehicleEF	LHD1	0.04	0.12
tblVehicleEF	LHD1	0.04	0.12
tblVehicleEF	LHD2	6.2830e-003	0.02
tblVehicleEF	LHD2	6.2830e-003	0.02
tblVehicleEF	LHD2	6.2830e-003	0.02
tblVehicleEF	MCY	3.6910e-003	2.8000e-003
tblVehicleEF	MCY	3.6910e-003	2.8000e-003
tblVehicleEF	MCY	3.6910e-003	2.8000e-003
tblVehicleEF	MDV	0.13	0.09

tblVehicleEF	MDV	0.13	0.09
tblVehicleEF	MDV	0.13	0.09
tblVehicleEF	MH	1.6550e-003	5.2000e-003
tblVehicleEF	MH	1.6550e-003	5.2000e-003
tblVehicleEF	MH	1.6550e-003	5.2000e-003
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	OBUS	2.4530e-003	9.4000e-003
tblVehicleEF	OBUS	2.4530e-003	9.4000e-003
tblVehicleEF	OBUS	2.4530e-003	9.4000e-003
tblVehicleEF	SBUS	5.4300e-004	1.5000e-003
tblVehicleEF	SBUS	5.4300e-004	1.5000e-003
tblVehicleEF	SBUS	5.4300e-004	1.5000e-003
tblVehicleEF	UBUS	3.1570e-003	9.7000e-003
tblVehicleEF	UBUS	3.1570e-003	9.7000e-003
tblVehicleEF	UBUS	3.1570e-003	9.7000e-003
tblVehicleTrips	WD_TR	6.96	5.64

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	5.3534	57.0134	43.9286	0.0495	18.2675	3.0903	21.3578	9.9840	2.8431	12.8271	0.0000	5,074.1126	5,074.1126	1.2406	0.0000	5,100.1650
2016	154.5332	30.8280	24.8775	0.0393	0.7632	2.0037	2.7669	0.2050	1.8819	2.0869	0.0000	3,799.3665	3,799.3665	0.7087	0.0000	3,814.2499
Total	**159.8866**	**87.8414**	**68.8061**	**0.0888**	**19.0306**	**5.0940**	**24.1246**	**10.1891**	**4.7249**	**14.9140**	**0.0000**	**8,873.4791**	**8,873.4791**	**1.9493**	**0.0000**	**8,914.4149**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	5.3534	57.0134	43.9286	0.0495	2.9491	2.5869	5.5359	1.5638	2.3799	3.9437	0.0000	5,074.1126	5,074.1126	1.2406	0.0000	5,100.1650
2016	154.5332	30.8280	24.8775	0.0393	0.7632	2.0037	2.7669	0.2050	1.8819	2.0869	0.0000	3,799.3665	3,799.3665	0.7087	0.0000	3,814.2499
Total	**159.8866**	**87.8414**	**68.8061**	**0.0888**	**3.7122**	**4.5906**	**8.3028**	**1.7689**	**4.2618**	**6.0306**	**0.0000**	**8,873.4790**	**8,873.4790**	**1.9493**	**0.0000**	**8,914.4149**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**80.49**	**9.88**	**65.58**	**82.64**	**9.80**	**59.56**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.4792	1.3000e-004	0.0139	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0291	0.0291	8.0000e-005		0.0308
Energy	0.0430	0.3905	0.3280	2.3400e-003		0.0297	0.0297		0.0297	0.0297		468.5544	468.5544	8.9800e-003	8.5900e-003	471.4059
Mobile	4.2803	27.3478	51.1354	0.1210	6.5734	0.3827	6.9561	1.7883	0.3519	2.1402		11,279.0513	11,279.0513	0.3254		11,285.8847
Total	**7.8025**	**27.7384**	**51.4773**	**0.1234**	**6.5734**	**0.4124**	**6.9858**	**1.7883**	**0.3817**	**2.1699**		**11,747.6348**	**11,747.6348**	**0.3345**	**8.5900e-003**	**11,757.3215**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.4792	1.3000e-004	0.0139	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0291	0.0291	8.0000e-005		0.0308
Energy	0.0430	0.3905	0.3280	2.3400e-003		0.0297	0.0297		0.0297	0.0297		468.5544	468.5544	8.9800e-003	8.5900e-003	471.4059
Mobile	4.2803	27.3478	51.1354	0.1210	6.5734	0.3827	6.9561	1.7883	0.3519	2.1402		11,279.0513	11,279.0513	0.3254		11,285.8847
Total	**7.8025**	**27.7384**	**51.4773**	**0.1234**	**6.5734**	**0.4124**	**6.9858**	**1.7883**	**0.3817**	**2.1699**		**11,747.6348**	**11,747.6348**	**0.3345**	**8.5900e-003**	**11,757.3215**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2015	1/28/2015	5	20	
2	Site Preparation	Site Preparation	1/29/2015	2/11/2015	5	10	
3	Grading	Grading	2/12/2015	3/11/2015	5	20	
4	Building Construction	Building Construction	3/12/2015	1/27/2016	5	230	
5	Paving	Paving	1/28/2016	2/24/2016	5	20	
6	Architectural Coating	Architectural Coating	2/25/2016	3/23/2016	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 199,500; Non-Residential Outdoor: 66,500 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	202.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	56.00	22.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	11.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use DPF for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Clean Paved Roads

3.2 Demolition - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5414	0.0000	0.5414	0.0820	0.0000	0.0820			0.0000			0.0000
Off-Road	4.5083	48.3629	36.0738	0.0399		2.4508	2.4508		2.2858	2.2858		4,127.1934	4,127.1934	1.1188		4,150.6886
Total	**4.5083**	**48.3629**	**36.0738**	**0.0399**	**0.5414**	**2.4508**	**2.9922**	**0.0820**	**2.2858**	**2.3678**		**4,127.1934**	**4,127.1934**	**1.1188**		**4,150.6886**

3.2 Demolition - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2148	3.3175	2.5040	7.5400e-003	0.1759	0.0530	0.2289	0.0482	0.0488	0.0969		766.9031	766.9031	6.3200e-003		767.0359
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0771	0.1031	1.0807	2.0600e-003	0.1677	1.6800e-003	0.1693	0.0445	1.5300e-003	0.0460		180.0161	180.0161	0.0109		180.2447
Total	**0.2919**	**3.4206**	**3.5847**	**9.6000e-003**	**0.3435**	**0.0547**	**0.3982**	**0.0926**	**0.0503**	**0.1429**		**946.9192**	**946.9192**	**0.0172**		**947.2806**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0824	0.0000	0.0824	0.0125	0.0000	0.0125			0.0000			0.0000
Off-Road	4.5083	48.3629	36.0738	0.0399		2.1152	2.1152		1.9770	1.9770	0.0000	4,127.1934	4,127.1934	1.1188		4,150.6886
Total	**4.5083**	**48.3629**	**36.0738**	**0.0399**	**0.0824**	**2.1152**	**2.1975**	**0.0125**	**1.9770**	**1.9895**	**0.0000**	**4,127.1934**	**4,127.1934**	**1.1188**		**4,150.6886**

3.2 Demolition - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2148	3.3175	2.5040	7.5400e-003	0.1759	0.0530	0.2289	0.0482	0.0488	0.0969		766.9031	766.9031	6.3200e-003		767.0359
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0771	0.1031	1.0807	2.0600e-003	0.1677	1.6800e-003	0.1693	0.0445	1.5300e-003	0.0460		180.0161	180.0161	0.0109		180.2447
Total	**0.2919**	**3.4206**	**3.5847**	**9.6000e-003**	**0.3435**	**0.0547**	**0.3982**	**0.0926**	**0.0503**	**0.1429**		**946.9192**	**946.9192**	**0.0172**		**947.2806**

3.3 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2609	56.8897	42.6318	0.0391		3.0883	3.0883		2.8412	2.8412		4,111.7444	4,111.7444	1.2275		4,137.5225
Total	**5.2609**	**56.8897**	**42.6318**	**0.0391**	**18.0663**	**3.0883**	**21.1545**	**9.9307**	**2.8412**	**12.7719**		**4,111.7444**	**4,111.7444**	**1.2275**		**4,137.5225**

3.3 Site Preparation - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0925	0.1238	1.2968	2.4700e-003	0.2012	2.0100e-003	0.2032	0.0534	1.8400e-003	0.0552		216.0194	216.0194	0.0131		216.2936
Total	**0.0925**	**0.1238**	**1.2968**	**2.4700e-003**	**0.2012**	**2.0100e-003**	**0.2032**	**0.0534**	**1.8400e-003**	**0.0552**		**216.0194**	**216.0194**	**0.0131**		**216.2936**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7479	0.0000	2.7479	1.5105	0.0000	1.5105			0.0000			0.0000
Off-Road	5.2609	56.8897	42.6318	0.0391		2.5849	2.5849		2.3781	2.3781	0.0000	4,111.7444	4,111.7444	1.2275		4,137.5224
Total	**5.2609**	**56.8897**	**42.6318**	**0.0391**	**2.7479**	**2.5849**	**5.3327**	**1.5105**	**2.3781**	**3.8885**	**0.0000**	**4,111.7444**	**4,111.7444**	**1.2275**		**4,137.5224**

3.3 Site Preparation - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0925	0.1238	1.2968	2.4700e-003	0.2012	2.0100e-003	0.2032	0.0534	1.8400e-003	0.0552		216.0194	216.0194	0.0131		216.2936
Total	**0.0925**	**0.1238**	**1.2968**	**2.4700e-003**	**0.2012**	**2.0100e-003**	**0.2032**	**0.0534**	**1.8400e-003**	**0.0552**		**216.0194**	**216.0194**	**0.0131**		**216.2936**

3.4 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	3.8327	40.4161	26.6731	0.0298		2.3284	2.3284		2.1421	2.1421		3,129.0158	3,129.0158	0.9341		3,148.6328
Total	**3.8327**	**40.4161**	**26.6731**	**0.0298**	**6.5523**	**2.3284**	**8.8807**	**3.3675**	**2.1421**	**5.5096**		**3,129.0158**	**3,129.0158**	**0.9341**		**3,148.6328**

3.4 Grading - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0771	0.1031	1.0807	2.0600e-003	0.1677	1.6800e-003	0.1693	0.0445	1.5300e-003	0.0460		180.0161	180.0161	0.0109		180.2447
Total	**0.0771**	**0.1031**	**1.0807**	**2.0600e-003**	**0.1677**	**1.6800e-003**	**0.1693**	**0.0445**	**1.5300e-003**	**0.0460**		**180.0161**	**180.0161**	**0.0109**		**180.2447**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.9966	0.0000	0.9966	0.5122	0.0000	0.5122			0.0000			0.0000
Off-Road	3.8327	40.4161	26.6731	0.0298		2.1605	2.1605		1.9877	1.9877	0.0000	3,129.0158	3,129.0158	0.9341		3,148.6328
Total	**3.8327**	**40.4161**	**26.6731**	**0.0298**	**0.9966**	**2.1605**	**3.1572**	**0.5122**	**1.9877**	**2.4999**	**0.0000**	**3,129.0158**	**3,129.0158**	**0.9341**		**3,148.6328**

3.4 Grading - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0771	0.1031	1.0807	2.0600e-003	0.1677	1.6800e-003	0.1693	0.0445	1.5300e-003	0.0460		180.0161	180.0161	0.0109		180.2447
Total	**0.0771**	**0.1031**	**1.0807**	**2.0600e-003**	**0.1677**	**1.6800e-003**	**0.1693**	**0.0445**	**1.5300e-003**	**0.0460**		**180.0161**	**180.0161**	**0.0109**		**180.2447**

3.5 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904		2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**		**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

3.5 Building Construction - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2331	2.2314	2.9349	4.8100e-003	0.1371	0.0369	0.1741	0.0390	0.0339	0.0730		485.7125	485.7125	4.0400e-003		485.7973
Worker	0.2878	0.3850	4.0346	7.6800e-003	0.6260	6.2500e-003	0.6322	0.1660	5.7300e-003	0.1717		672.0602	672.0602	0.0406		672.9135
Total	**0.5210**	**2.6164**	**6.9695**	**0.0125**	**0.7631**	**0.0432**	**0.8063**	**0.2050**	**0.0397**	**0.2447**		**1,157.7727**	**1,157.7727**	**0.0447**		**1,158.7109**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904	0.0000	2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**	**0.0000**	**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

3.5 Building Construction - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2331	2.2314	2.9349	4.8100e-003	0.1371	0.0369	0.1741	0.0390	0.0339	0.0730		485.7125	485.7125	4.0400e-003		485.7973
Worker	0.2878	0.3850	4.0346	7.6800e-003	0.6260	6.2500e-003	0.6322	0.1660	5.7300e-003	0.1717		672.0602	672.0602	0.0406		672.9135
Total	**0.5210**	**2.6164**	**6.9695**	**0.0125**	**0.7631**	**0.0432**	**0.8063**	**0.2050**	**0.0397**	**0.2447**		**1,157.7727**	**1,157.7727**	**0.0447**		**1,158.7109**

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485		2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**		**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

3.5 Building Construction - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2045	1.9735	2.7232	4.8000e-003	0.1372	0.0304	0.1676	0.0390	0.0280	0.0670		480.4626	480.4626	3.6600e-003		480.5395
Worker	0.2595	0.3481	3.6477	7.6800e-003	0.6260	5.9200e-003	0.6319	0.1660	5.4400e-003	0.1714		649.6174	649.6174	0.0375		650.4042
Total	**0.4640**	**2.3216**	**6.3709**	**0.0125**	**0.7632**	**0.0363**	**0.7995**	**0.2050**	**0.0334**	**0.2385**		**1,130.0801**	**1,130.0801**	**0.0411**		**1,130.9437**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485	0.0000	2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**	**0.0000**	**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

3.5 Building Construction - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2045	1.9735	2.7232	4.8000e-003	0.1372	0.0304	0.1676	0.0390	0.0280	0.0670		480.4626	480.4626	3.6600e-003		480.5395
Worker	0.2595	0.3481	3.6477	7.6800e-003	0.6260	5.9200e-003	0.6319	0.1660	5.4400e-003	0.1714		649.6174	649.6174	0.0375		650.4042
Total	**0.4640**	**2.3216**	**6.3709**	**0.0125**	**0.7632**	**0.0363**	**0.7995**	**0.2050**	**0.0334**	**0.2385**		**1,130.0801**	**1,130.0801**	**0.0411**		**1,130.9437**

3.6 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601		2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.0898**	**22.3859**	**14.8176**	**0.0223**		**1.2610**	**1.2610**		**1.1601**	**1.1601**		**2,316.3767**	**2,316.3767**	**0.6987**		**2,331.0495**

3.6 Paving - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0695	0.0932	0.9771	2.0600e-003	0.1677	1.5900e-003	0.1693	0.0445	1.4600e-003	0.0459		174.0047	174.0047	0.0100		174.2154
Total	**0.0695**	**0.0932**	**0.9771**	**2.0600e-003**	**0.1677**	**1.5900e-003**	**0.1693**	**0.0445**	**1.4600e-003**	**0.0459**		**174.0047**	**174.0047**	**0.0100**		**174.2154**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601	0.0000	2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.0898**	**22.3859**	**14.8176**	**0.0223**		**1.2610**	**1.2610**		**1.1601**	**1.1601**	**0.0000**	**2,316.3767**	**2,316.3767**	**0.6987**		**2,331.0495**

3.6 Paving - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0695	0.0932	0.9771	2.0600e-003	0.1677	1.5900e-003	0.1693	0.0445	1.4600e-003	0.0459		174.0047	174.0047	0.0100		174.2154
Total	**0.0695**	**0.0932**	**0.9771**	**2.0600e-003**	**0.1677**	**1.5900e-003**	**0.1693**	**0.0445**	**1.4600e-003**	**0.0459**		**174.0047**	**174.0047**	**0.0100**		**174.2154**

3.7 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	154.1138					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449
Total	**154.4822**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**		**281.4481**	**281.4481**	**0.0332**		**282.1449**

3.7 Architectural Coating - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0510	0.0684	0.7165	1.5100e-003	0.1230	1.1600e-003	0.1241	0.0326	1.0700e-003	0.0337		127.6034	127.6034	7.3600e-003		127.7580
Total	**0.0510**	**0.0684**	**0.7165**	**1.5100e-003**	**0.1230**	**1.1600e-003**	**0.1241**	**0.0326**	**1.0700e-003**	**0.0337**		**127.6034**	**127.6034**	**7.3600e-003**		**127.7580**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	154.1138					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332		282.1449
Total	**154.4822**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**	**0.0000**	**281.4481**	**281.4481**	**0.0332**		**282.1449**

3.7 Architectural Coating - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0510	0.0684	0.7165	1.5100e-003	0.1230	1.1600e-003	0.1241	0.0326	1.0700e-003	0.0337		127.6034	127.6034	7.3600e-003		127.7580
Total	**0.0510**	**0.0684**	**0.7165**	**1.5100e-003**	**0.1230**	**1.1600e-003**	**0.1241**	**0.0326**	**1.0700e-003**	**0.0337**		**127.6034**	**127.6034**	**7.3600e-003**		**127.7580**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.2803	27.3478	51.1354	0.1210	6.5734	0.3827	6.9561	1.7883	0.3519	2.1402		11,279.0513	11,279.0513	0.3254		11,285.8847
Unmitigated	4.2803	27.3478	51.1354	0.1210	6.5734	0.3827	6.9561	1.7883	0.3519	2.1402		11,279.0513	11,279.0513	0.3254		11,285.8847

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Industrial Park	750.12	331.17	97.09	2,374,122	2,374,122
Total	750.12	331.17	97.09	2,374,122	2,374,122

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Industrial Park	16.60	8.40	6.90	59.00	28.00	13.00	79	19	2

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.397500	0.043500	0.132700	0.093500	0.118500	0.019200	0.050000	0.116500	0.009400	0.009700	0.002800	0.001500	0.005200

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0430	0.3905	0.3280	2.3400e-003		0.0297	0.0297		0.0297	0.0297		468.5544	468.5544	8.9800e-003	8.5900e-003	471.4059
NaturalGas Unmitigated	0.0430	0.3905	0.3280	2.3400e-003		0.0297	0.0297		0.0297	0.0297		468.5544	468.5544	8.9800e-003	8.5900e-003	471.4059

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Industrial Park	3982.71	0.0430	0.3905	0.3280	2.3400e-003		0.0297	0.0297		0.0297	0.0297		468.5544	468.5544	8.9800e-003	8.5900e-003	471.4059
Total		**0.0430**	**0.3905**	**0.3280**	**2.3400e-003**		**0.0297**	**0.0297**		**0.0297**	**0.0297**		**468.5544**	**468.5544**	**8.9800e-003**	**8.5900e-003**	**471.4059**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Industrial Park	3.98271	0.0430	0.3905	0.3280	2.3400e-003		0.0297	0.0297		0.0297	0.0297		468.5544	468.5544	8.9800e-003	8.5900e-003	471.4059
Total		**0.0430**	**0.3905**	**0.3280**	**2.3400e-003**		**0.0297**	**0.0297**		**0.0297**	**0.0297**		**468.5544**	**468.5544**	**8.9800e-003**	**8.5900e-003**	**471.4059**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.4792	1.3000e-004	0.0139	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0291	0.0291	8.0000e-005		0.0308
Unmitigated	3.4792	1.3000e-004	0.0139	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0291	0.0291	8.0000e-005		0.0308

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.8445					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.6334					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3600e-003	1.3000e-004	0.0139	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0291	0.0291	8.0000e-005		0.0308
Total	**3.4792**	**1.3000e-004**	**0.0139**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**		**0.0291**	**0.0291**	**8.0000e-005**		**0.0308**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Consumer Products	2.6334					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3600e-003	1.3000e-004	0.0139	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0291	0.0291	8.0000e-005		0.0308
Architectural Coating	0.8445					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.4792**	**1.3000e-004**	**0.0139**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**		**0.0291**	**0.0291**	**8.0000e-005**		**0.0308**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Appendix E

Emfac2011 to CalEEMod Idle Conversion

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Appendix E
Emfac2011 to CalEEMod Idle Conversion

EMFAC2011 Emission Rates			Region Type: County		Region: Los Angeles			Calendar Year: 2016		Season: Annual	
Vehicle Classification: EMFAC2007 Categories											
Region	CalYr	Season	Veh_Class	Fuel	MdlYr	Speed	VMT	CO_RUNEX	NOX_RUNEX	PM10_RUNEX	PM2_5_RUNEX
						(miles/hr)	(miles/day)	(gms/mile)	(gms/mile)	(gms/mile)	(gms/mile)
Los Angel	2016.0000	Annual	LDA	GAS	Aggregate	5.0000	345880.3858	2.3209	0.1757	0.0108	0.0099
Los Angel	2016.0000	Annual	LDA	DSL	Aggregate	5.0000	1186.7886	0.7035	0.6651	0.0773	0.0711
Los Angel	2016.0000	Annual	LDT1	GAS	Aggregate	5.0000	40441.7753	6.7928	0.5953	0.0251	0.0232
Los Angel	2016.0000	Annual	LDT1	DSL	Aggregate	5.0000	55.7959	1.2153	0.9109	0.1687	0.1552
Los Angel	2016.0000	Annual	LDT2	GAS	Aggregate	5.0000	117298.8511	3.2893	0.3547	0.0119	0.0109
Los Angel	2016.0000	Annual	LDT2	DSL	Aggregate	5.0000	55.5291	0.9253	0.8824	0.1067	0.0982
Los Angel	2016.0000	Annual	LHD1	GAS	Aggregate	5.0000	16805.8480	8.3163	0.4226	0.0086	0.0079
Los Angel	2016.0000	Annual	LHD1	DSL	Aggregate	5.0000	2780.2589	3.7364	5.4655	0.1151	0.1059
Los Angel	2016.0000	Annual	LHD2	GAS	Aggregate	5.0000	1812.5330	6.5576	0.3740	0.0074	0.0068
Los Angel	2016.0000	Annual	LHD2	DSL	Aggregate	5.0000	988.5988	3.5170	5.1852	0.1119	0.1030
Los Angel	2016.0000	Annual	MCY	GAS	Aggregate	5.0000	3017.6323	26.6554	1.1877	0.0009	0.0008
Los Angel	2016.0000	Annual	MDV	GAS	Aggregate	5.0000	88513.8212	5.0312	0.5906	0.0134	0.0123
Los Angel	2016.0000	Annual	MDV	DSL	Aggregate	5.0000	95.6430	0.6515	0.5791	0.0787	0.0724
Los Angel	2016.0000	Annual	MH	GAS	Aggregate	5.0000	878.1579	21.6370	0.6170	0.0120	0.0108
Los Angel	2016.0000	Annual	MH	DSL	Aggregate	5.0000	91.8868	2.6208	17.7475	0.5447	0.5011
Los Angel	2016.0000	Annual	OBUS	GAS	Aggregate	5.0000	405.8789	10.8092	0.7854	0.0038	0.0035
Los Angel	2016.0000	Annual	OBUS	DSL	Aggregate	5.0000	490.9301	3.8990	19.0599	0.2335	0.2148
Los Angel	2016.0000	Annual	SBUS	GAS	Aggregate	5.0000	310.4455	66.2410	1.7202	0.0270	0.0241
Los Angel	2016.0000	Annual	SBUS	DSL	Aggregate	5.0000	986.0743	2.1971	28.4645	0.4311	0.3966
Los Angel	2016.0000	Annual	T6	GAS	Aggregate	5.0000	1516.7737	16.8233	0.9210	0.0063	0.0057
Los Angel	2016.0000	Annual	T6	DSL	Aggregate	5.0000	4416.0714	2.9883	11.6909	0.2453	0.2256
Los Angel	2016.0000	Annual	T7	GAS	Aggregate	5.0000	329.0019	123.2898	3.4621	0.0026	0.0023
Los Angel	2016.0000	Annual	T7	DSL	Aggregate	5.0000	8514.2305	6.2892	19.6444	0.1556	0.1431
Los Angel	2016.0000	Annual	UBUS	GAS	Aggregate	5.0000	1045.4932	59.2363	2.7833	0.0156	0.0141
Los Angel	2016.0000	Annual	UBUS	DSL	Aggregate	5.0000	6007.5154	11.3026	29.9600	0.7465	0.6867
% of Fleet	Veh_Class	Fuel	Idle Time	CO	NOX	PM10	PM2.5	CO	NOX	PM10	PM2.5
			(min/day)	(gms/min)	(gms/min)	(gms/min)	(gms/min)	(lb/day)	(lb/day)	(lb/day)	(lb/day)
39.7500	LDA	GAS	16.0000	0.1934	0.0146	0.0009	0.0008	0.0027	0.0002	0.0000	0.0000
39.7500	LDA	DSL	16.0000	0.0586	0.0554	0.0064	0.0059	0.0000	0.0000	0.0000	0.0000
4.3500	LDT1	GAS	16.0000	0.5661	0.0496	0.0021	0.0019	0.0009	0.0001	0.0000	0.0000
4.3700	LDT1	DSL	16.0000	0.1013	0.0759	0.0141	0.0129	0.0000	0.0000	0.0000	0.0000
13.2700	LDT2	GAS	16.0000	0.2741	0.0296	0.0010	0.0009	0.0013	0.0001	0.0000	0.0000
13.2700	LDT2	DSL	16.0000	0.0771	0.0735	0.0089	0.0082	0.0000	0.0000	0.0000	0.0000
11.8500	LHD1	GAS	16.0000	0.6930	0.0352	0.0007	0.0007	0.0025	0.0001	0.0000	0.0000
11.8500	LHD1	DSL	16.0000	0.3114	0.4555	0.0096	0.0088	0.0002	0.0003	0.0000	0.0000
1.9200	LHD2	GAS	16.0000	0.5465	0.0312	0.0006	0.0006	0.0002	0.0000	0.0000	0.0000
1.9200	LHD2	DSL	16.0000	0.2931	0.4321	0.0093	0.0086	0.0001	0.0001	0.0000	0.0000
0.2800	MCY	GAS	16.0000	2.2213	0.0990	0.0001	0.0001	0.0002	0.0000	0.0000	0.0000
9.3500	MDV	GAS	16.0000	0.4193	0.0492	0.0011	0.0010	0.0014	0.0002	0.0000	0.0000
9.3500	MDV	DSL	16.0000	0.0543	0.0483	0.0066	0.0060	0.0000	0.0000	0.0000	0.0000
0.5200	MH	GAS	16.0000	1.8031	0.0514	0.0010	0.0009	0.0003	0.0000	0.0000	0.0000
0.5200	MH	DSL	16.0000	0.2184	1.4790	0.0454	0.0418	0.0000	0.0000	0.0000	0.0000
0.9400	OBUS	GAS	16.0000	0.9008	0.0655	0.0003	0.0003	0.0001	0.0000	0.0000	0.0000
0.9400	OBUS	DSL	16.0000	0.3249	1.5883	0.0195	0.0179	0.0001	0.0003	0.0000	0.0000
0.1500	SBUS	GAS	16.0000	5.5201	0.1434	0.0022	0.0020	0.0001	0.0000	0.0000	0.0000
0.1500	SBUS	DSL	16.0000	0.1831	2.3720	0.0359	0.0331	0.0000	0.0001	0.0000	0.0000
11.6500	T6	GAS	16.0000	1.4019	0.0767	0.0005	0.0005	0.0006	0.0000	0.0000	0.0000
11.6500	T6	DSL	16.0000	0.2490	0.9742	0.0204	0.0188	0.0003	0.0012	0.0000	0.0000
11.6500	T7	GAS	16.0000	10.2742	0.2885	0.0002	0.0002	0.0009	0.0000	0.0000	0.0000
11.6500	T7	DSL	16.0000	0.5241	1.6370	0.0130	0.0119	0.0012	0.0039	0.0000	0.0000
0.9700	UBUS	GAS	16.0000	4.9364	0.2319	0.0013	0.0012	0.0003	0.0000	0.0000	0.0000
0.9700	UBUS	DSL	16.0000	0.9419	2.4967	0.0622	0.0572	0.0003	0.0007	0.0000	0.0000
Number of Vehicles per day			750	Daily On-Site Totals (pounds per day)				10.2015	5.5511	0.0865	0.0796

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Appendix D

Arrow Highway Business Park Architectural and Historic Building Assessment

(Archaeological Associates, August 16, 2014)

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AN ARCHITECTURAL AND HISTORICAL BUILDING ASSESSMENT OF A RESIDENTIAL PROPERTY LOCATED AT 16203 ARROW HIGHWAY, CITY OF IRWINDALE, LOS ANGELES COUNTY

by

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for

Mr. Peter Lewandowski
Environmental Impact Sciences
26051 Via Concha
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August 16, 2014

USGS 7.5' Topographic Quadrangle: *Baldwin Park*
Section 4, Township 1 South, Range 10 West, SBBM

Study Area Acreage: 0.92-acres
APN 8619-010-907

:

KEYWORDS: City of Irwindale, Arrow Highway, Los Angeles County

The undersigned certifies that the attached report is a true and accurate description of the results of a CULTURAL RESOURCES survey described herein.

.....……

Robert S. White
Principal Investigator

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Appendix A: Historic Resources Inventory Form (DPR 523A & 523B) for 16203 Arrow Highway

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MANAGEMENT SUMMARY

At the request of Environmental Impact Sciences, Archaeological Associates has undertaken an architectural and historical building assessment of a standing building ruin located at 16203 Arrow Highway in the City Of Irwindale, Los Angles County. Presently, it is desired to demolish the building and construct new commercial development within the property boundaries.

The purpose of this study was to determine if the subject building was architecturally or historically important. The residential ruin was evaluated for the California Register of Historical Resources (CRHR). The results of the records search conducted at the South Central Coastal Information Center at Cal State Fullerton indicated that no prehistoric or historic sites have been previously recorded within the boundaries of the study area. The architectural/historical analysis of the circa 1925 residence resulted in the determination that the building does not constitute a significant historical resource under CEQA.

No further work in conjunction with this resource is recommended. Subsequent monitoring of the building demolition and monitoring of any future earth-disturbing activities is not recommended or warranted. As a matter of course, Historic Resources Inventory Forms (DPR 523A & 523B) were completed for the structure (Primary # 36-012338) and submitted to the South Central Coastal Information Center at Cal State Fullerton.

In the event that human remains are encountered during the course of any future development, California State Law (*Health and Safety Code Section 7050.5 and Section 5079.98 of the Public Resources Code*) states that no further earth disturbance shall occur at the location of the find until the Los Angeles County Coronor has been notified. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD).

I. INTRODUCTION

The following report was written for Environmental Impact Sciences by Archaeological Associates. It describes the results of an architectural and historical building evaluation of a historic building ruin located at 16203 Arrow Highway in the City of Irwindale, Los Angeles County. Presently, it is desired to demolish the ruin and construct commercial development on the property.

The purpose of this study was to determine if the subject building was architecturally or historically important. This information is needed since adoption of the development plan could result in adverse effects upon locations of historical significance. Our assessment consisted of: (1) a records search conducted to determine whether any previously recorded historic or prehistoric material is present within the subject property, (2) literature and archival review, and (3) a field inspection of the building ruin. No survey for prehistoric resources was conducted for this project.

The study was conducted in accordance with the California Environmental Quality Act (CEQA), as amended in 1992, which includes criteria for eligibility to the California Register of Historical Resources (CRHR

II. STUDY AREA LOCATION

Regionally, the project area lies southeast of the Santa Fe Flood Control Basin between the 210 freeway on the north and Interstate 10 on the south (fig. 1). Legally, the subject property is situated within the south ½ of the Southeast ¼ of Section 4, Township 1 South, Range 10 West, San Bernardino Base Meridian (fig. 2). More specifically, the study area lies on the north side of Arrow Highway a short distance east of Irwindale Avenue. The 0.92-acre parcel is identified as APN 8619-010-907.

III. RECORDS SEARCH

A records search of the study area was conducted by Robert S. White at the South Central Coastal Information Center at Cal State Fullerton. The search entailed a review of all previously recorded prehistoric and historic archaeological sites situated on or within a one-mile radius of the project area. Additionally, the National Register of Historic Places (NRHP), California Historical Landmarks (CHL), California Points of Historical Interest (CPHI), and the Office of Historic Preservation's Directory of Properties were reviewed for the purpose of identifying any historic properties.

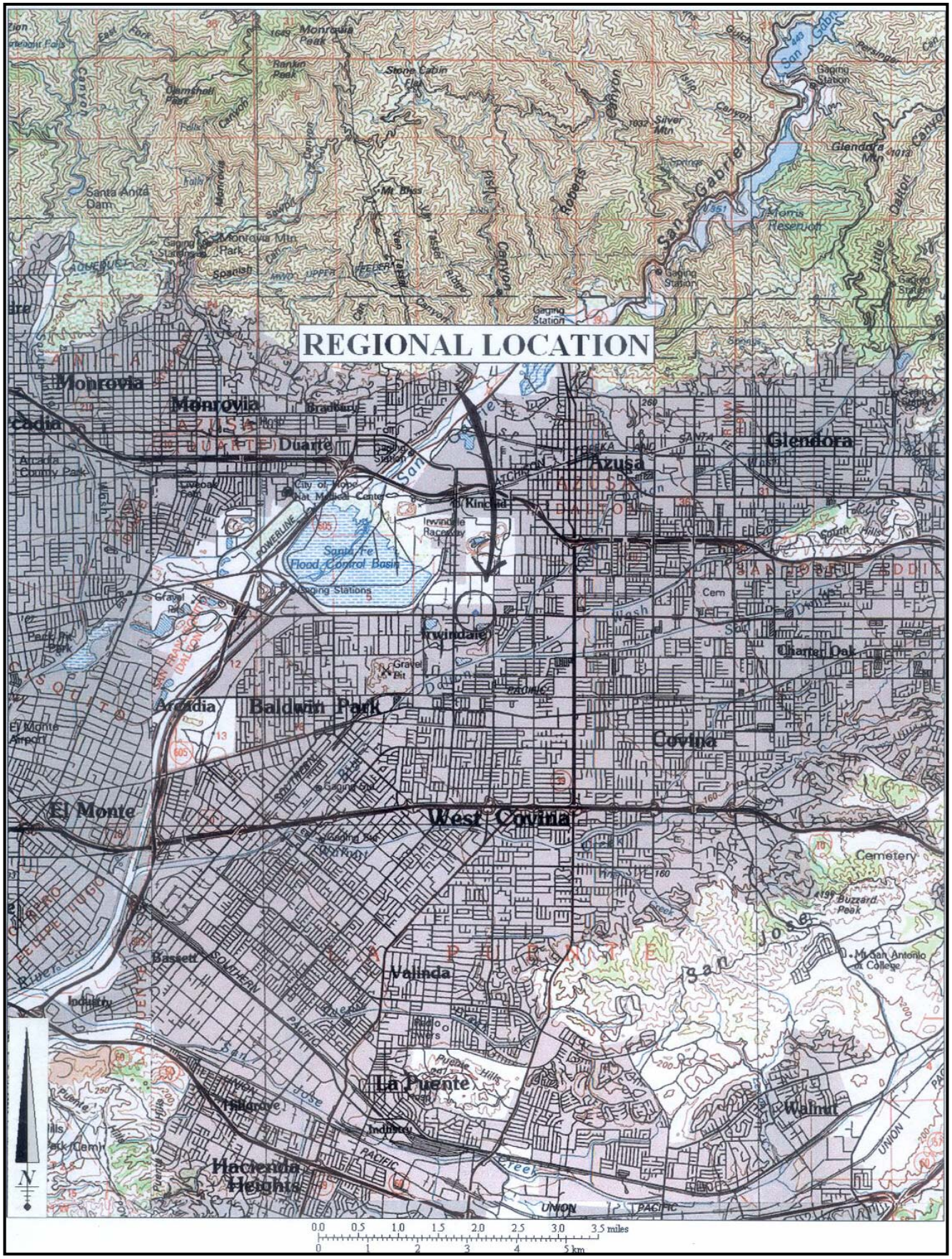

Figure 1. Regional location of the project area as indicated on a portion of the USGS *San Bernardino* 1:100,000 scale Topographic Map (1982).

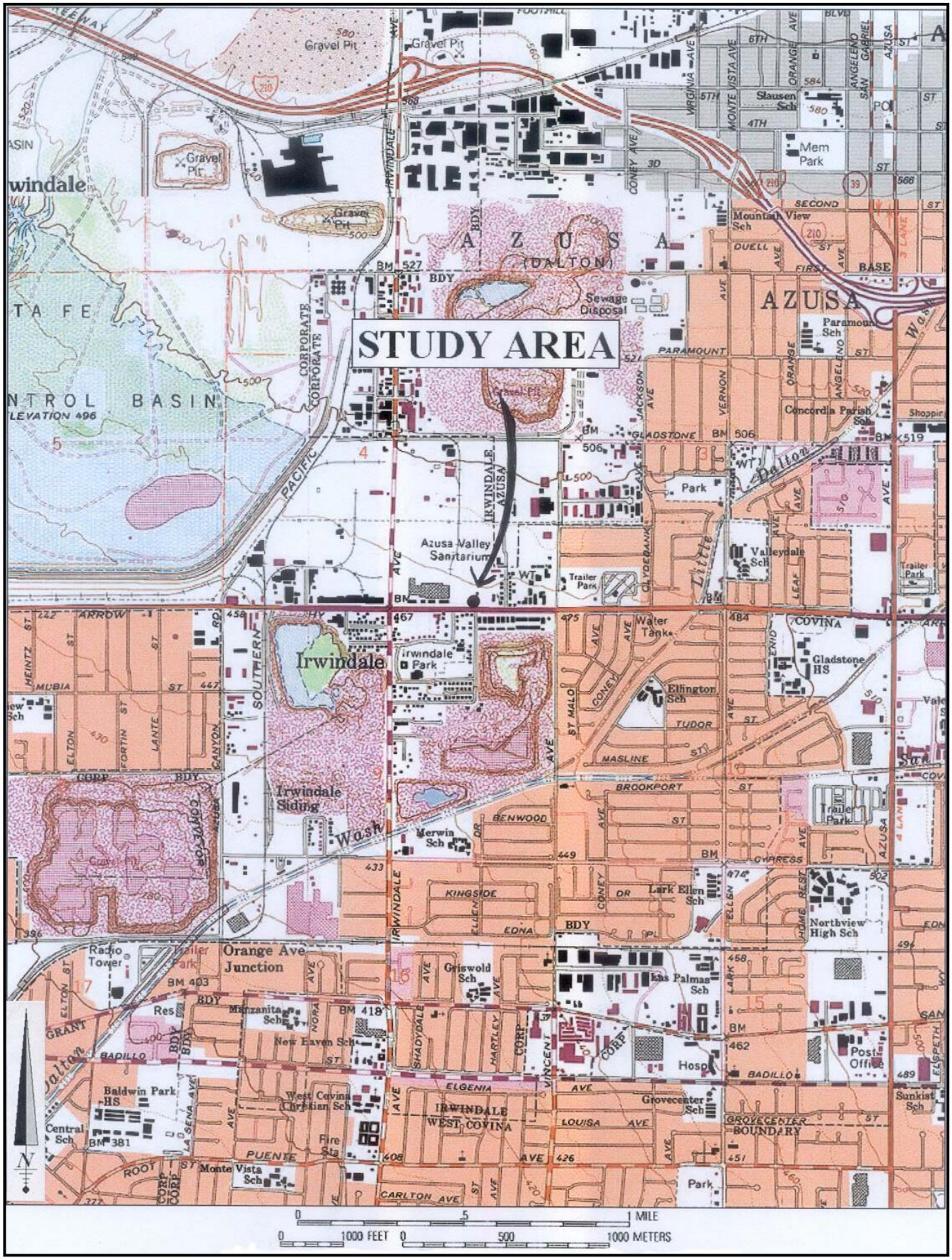

Figure 2. Study area plotted on a portion of the USGS *Baldwin Park* 7.5' Topographic Quadrangle (1966, photorevised 1981).

A. Previously Recorded Archaeological Sites

The results of the search indicated that no prehistoric or historic archaeological sites have been previously recorded on the subject property. Only one prehistoric/historic resource has been recorded with a one-mile radius of the study area. The resource, Primary # 19-188983 comprises the 270-mile Boulder Dam-Los Angeles 287.5 kV Transmission Line (two parallel circuits) constructed 1935-1936. The transmission line was found eligible for the National Register of Historic Places in 1999 under Criteria A and C (Stewart 2008). It lies approximately 1500-feet to the north of Arrow Highway.

B. Heritage Properties

Listings of the National Register of Historic Places (NRHP), California Historical Landmarks (CHL), and California Points of Historical Interest (CPHI) indicate that no heritage properties have been recorded within the study area. Although not officially recorded with State of California or designated by the federal government, the nearby Our Lady of Guadalupe Mission (1917) would qualify as the closest historical landmark in the near vicinity of the project. The concrete/cobble masonry building was acquired by the City of Irwindale in circa 1990 from the LA Archdiocese. The last service held at the church was in 1988 due to concerns of earthquake instability. It continues to be maintained in very good condition to this day.

C. Previous Surveys

The results of the search indicated that no prior archaeological assessments have been conducted within the study area. However, approximately 10% of the surrounding area has been surveyed for cultural resources. These investigations comprise large (more than 40-acres) and small acreage surveys as well as linear investigations (i.e. roadway and pipeline alignments).

IV. HISTORIC MAP RESEARCH

In addition to the records search, several historic GLO and Geological Survey (USGS) maps of the Irwindale region were inspected. No Sanborn maps are available for this area. These maps are on file with one or more of the following entities: Bureau of Land Management, Map Room of the Science Library at the University of California at Riverside and the California Historic Topographic Map Collection housed in Special Collections at the Merriam Library at California

State University, Chico. These included:

GLO Plat Map: Township No. I South Range No. 10 West, San Bernardino Meridan Surveyed 1852-1865, Approved 1865.

GLO Plat Map: Township No.1 South Range No.10 West, San Bernardino Meridan Surveyed 1869, Approved 1869.

GLO Plat Map: Township No. I South, Range No. 10 West, San Bernardino Meridan Surveyed 1875, Approved 1877.

Southern California Sheet No.1, 1:250,000, 1901 reprinted 1948, surveyed 1893-1900.

Pomona 15' 1894 USGS Topographic Quadrangle.

Pomona 15' 1904 USGS Topographic Quadrangle.

Azusa 7.5' 1939 USGS Topographic Quadrangle.

Baldwin Park 7.5' 1953 USGS Topographic Quadrangle.

Baldwin Park 7.5' 1966 USGS Topographic Quadrangle.

Baldwin Park 7.5' 1966 /1972 USGS Topographic Quadrangle.

Baldwin Park 7.5' 1966/1981 USGS Topographic Quadrangle.

A review of these maps was performed for the purpose of identifying locations of potential historic interest. The results of the map research indicated that the stone/cement residence located at 16203 Arrow Highway first appears on the *Azusa 7.5'* 1939 USGS Topographic Quadrangle. The building continues to be illustrated on subsequent maps.

V. HISTORIC AERIAL PHOTOGRAPHS

A review of historic aerial photographs presented in the Phase 1 Environmental Assessment report for the project was also conducted (Hutchens and Nuno 2014). The review indicated that the residential building at 16203 Arrow Highway is present on the 1928 aerial photo. It is also indicated on subsequent aerial photographs. No earlier photographs were available for examination.

VI. LAND PATENTS

Archival research also included a review of land patents on file with the Bureau of Land Management (BLM) in Sacramento. The study area lies in the South ½ of the Southeast ¼ of Township 1 South, Range 10 West, San Bernardino Base Meridian. Office records indicate that two serial land patents were filed for the Southeast ¼ of Section 4.

The first patent was issued on February 1, 1882 for 160-acres to Nelson Williamson by authority of the May 20, 1862: Homestead Entry Original (12Stat.392). The land patent is recorded as BLM Accession Nr/Serial Nr: CACAAA 085134. The second patent, for the identical 160-acres under the same authority, was granted to Archibald Thompson on July 31, 1893. It is recorded as BLM Accession Nr/Serial Nr: CACAAA 085293.

VII. DESCRIPTION OF 16203 ARROW HIGHWAY

An examination of the built environment within the study area was conducted by Robert S. White and Richard Guttenberg on August 7, 2014. The primary purpose of the field visit was to determine if the building could be considered architecturally important.

A. 16203 Arrow Highway

This single-story building was originally conceived as a residence but appears to have been adapted to serve as an office in later years. It has completely burned and is considered a standing ruin. All that remains of the building are the cobble/masonry walls and small portions of interior walls. The roof, interior, window sashes and doors are gone.

The building is irregular in plan and oriented north/south along its long axis. It was divided into five rooms comprising a master bedroom, second bedroom/office, dining room, kitchen, and a bathroom. The primary point of entry was from the east elevation. At first glance it appears that the construction is wholly with mortared river cobbles. A closer examination of the wall profiles shows that this is not the case. Alternatively, relatively smooth-sided concrete walls, containing smaller cobbles as aggregate, were first constructed and the exterior wall surfaces then “skinned” or “sistered” with a course of larger cobbles set in mortar for a decorative effect.

The building sits upon a concrete slab. Electrical service appears to have originally been tube and socket. Utilities were routed into the building through the roof. Original wall studs are full dimension and all nails and spikes are modern, machine-made varieties. Interior walls were covered

with lath and plaster. Modern lag bolts are set around the perimeter of the wall tops to facilitate holding the roof in place. This may have been an attempted at a seismic retrofit at a later point in time. Surviving modifications include a wooden shelter for a multi-line telephone system on the south elevation and reconstructed concrete sills under many of the large window openings. No steel of any kind appears to have been used in the walls for support. Interestingly, there is no fireplace. One can only imagine that heat was derived from one or more stoves.

Dating of the building proved to be somewhat problematic. A comparison to the nearby Our Lady of Guadalupe Mission constructed in 1917 shows that the residence at 16203 Arrow Highway is of more recent construction and by different hands. In particular, the mortar used to set the cobbles in the church is significantly different (very soft and lighter in color) as compared to the essentially modern mortar used in the decorative façade of the house. Also, slight, but noticeable spacing differences between the cobbles in the two building also would suggest the residence was constructed by others.

The review of the historic maps and aerial photographs indicates that the house was constructed sometime after 1904 and before 1928. Even without this information, given the methods of construction, materials employed and the fact the privy was inside the building, it appears that it was constructed circa 1925.

VIII. DETERMINATIONS OF ELIGIBILITY

The residence at 16203 Arrow Highway was evaluated for significance under the California Environmental Quality Act (CEQA. CEQA, as amended in 1992, includes criteria for California Register of Historical Resources (CRHR).

A. CEQA Compliance

According to California law, only significant historic resources require consideration beyond Regs. (§15064.5). In addition, Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the identification stage in the environmental review process. Significant historical resources are resources which are listed in the California Register of Historical Resources (CRHR: Ca. Code of architectural, engineering, scientific, economic, agricultural, educational, social, political, military,

or cultural annals of California may be considered to be an historical resource.…if the resource meets the criteria for listing in the CRHR. An eligible resource is one which:

(1) It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.

(2) It is associated with the lives of persons important to local, California, or national history;

(3) It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or

(4) It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

B. CRHR Evaluation

Criterion A

Fairly extensive research of the residence located at 16203 Arrow Highway indicates that it is not associated with any historic event important in the regional history of California or the United States. Consequently, it does not appear eligible for listing in the CRHR under Criterion A.

Criterion B

Research has also failed to identify any person associated with the residence as important or prominent to National or California history. Therefore, it does not appear eligible for listing in the CRHR under Criterion B.

Criterion C

Criterion C posits eligibility on the basis of style or artistic merit. While the building is interesting due to the choice of materials, it is not the work of a master architect or builder. Furthermore, it does not possess high artistic value and is not a distinctive example of any particular engineering style. Lastly, the building is in ruin and seems beyond the point of restoration. For these reasons, the residential building does not appear to embody the kind of architectural distinction that would qualify it for inclusion into the CRHR under Criterion C.

Criterion D

Under Criterion D, the historic building is not likely to yield information about the history or prehistory of the area as this criterion primarily pertains to archaeological sites. Therefore, it does not appear eligible for listing in the CRHR under Criterion D.

IX. MANAGEMENT CONSIDERATIONS

A. Historic Resources

The historic building ruin located at 16203 Arrow Highway does not appear significant within the meaning of CEQA. Therefore, no further work in conjunction with this resource is recommended. Consequently, there is nothing precluding demolition of the structure. Subsequent monitoring of the building demolition and monitoring of future earth-disturbing activities is not recommended or warranted.

As a matter of course, Historic Resources Inventory Forms (DPR 523A & 523B) were completed for the structure and submitted to the South Central Coastal Information Center at Cal State Fullerton (Appendix A).

B. Discovery of Human Remains

In the event that human remains are encountered during the course of any future development, California State Law (*Health and Safety Code Section 7050.5 and Section 5079.98 of the Public Resources Code*) states that no further earth disturbance shall occur at the location of the find until the Los Angeles County Coronor has been notified. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD).

REFERENCES CITED

Hutchins, Ashley P. and Julio A. Nuno

2014 Phase 1 Environmental Assessment 16203-16233 Arrow Highway, Irwindale, California 91706. SCS Engineers, Long Beach.

Stewart, Noah M.

2008 Historic Resources Inventory form for P19-188983 on file with the South Central Coastal Information Center, California State University, Fullerton.

Plate I. Top: Southwest view of east elevation of building ruin located at 16203 Arrow Highway. **Bottom:** Northeasterly view of west and south elevations.

Plate II. Top: Northwesterly view of the south and east building elevations.
Bottom: Close-up of wall detail showing decorative rock affixed to structural wall.

Appendix E

Arrow Highway Business Park
Phase I Environmental Site Assessment

(SCS Engineers, July 3, 2014)

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PHASE I ENVIRONMENTAL ASSESSMENT
16203-16233 ARROW HIGHWAY
IRWINDALE, CALIFORNIA 91706
(APNs 8619-010-907, 8619-012-905, and 8619-012-909)

Prepared for:

Irwindale Housing Authority
5050 North Irwindale Avenue
Irwindale, California 91706
(626) 430-2213

Prepared by:

SCS ENGINEERS
3900 Kilroy Airport Way, Suite 100
Long Beach, California 90806
(562) 426-9544

July 3, 2014
File No. 01213263.01

This Phase I Environmental Assessment Report for 16203-16233 Arrow Highway located in Irwindale, California, dated July 3, 2014, was prepared by Ashley P. Hutchens and reviewed Julio A. Nuno.

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in §312.10 of 40 CFR 312. The resumes for the individuals below are included in **Appendix F**. We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Ashley P. Hutchens, REPA
Project Manager
SCS ENGINEERS

Julio A. Nuno, REPA
Vice President
SCS ENGINEERS

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EXECUTIVE SUMMARY

SCS Engineers (SCS) was retained by Irwindale Housing Authority (the "User") to prepare a Phase I Environmental Assessment of the property located at 16203-16233 Arrow Highway in Irwindale, California (the "Property"). This assessment was performed in conformance with 40 CFR 312, Standards for Conducting All Appropriate Inquiries, and in general conformance with ASTM E1527-13.

The Property is located at 16203-16233 Arrow Hwy in Irwindale on the north side of Arrow Hwy approximately 100 feet west of Morada Street. The Property is comprised of three contiguous parcels approximately 6.26 acres in size and has been assigned Assessor's Parcel Numbers (APNs) 8619-010-907, 8619-012-905, and 8619-012-909 for 16203, 16223, and 16233 Arrow Hwy, respectively. The parcels are 3.43, 1.91, 0.92 acres in size for the above-referenced addresses, respectively.

The Property consists of three vacated parcels and is currently occupied as follows:

- 16203 – A former dwelling that has recently burned. An asphalt drive runs up the east side of this parcel. A debris pile (concrete, wood, poles, etc.) was observed on the north end of the parcel. A small soil stockpile was observed on the south end just inside the gate. The stockpile was reportedly illegally dumped on the street and moved onto the Property by Irwindale Public Works. The unknown origin of the stockpile is a recognized environmental condition (REC).
- 16223 – A structure is present at the north end with an asphalt drive leading to it. The structure is divided into six units (A-F) and has been heavily vandalized with graffiti, skate board ramp, etc. Debris and paint cans are scattered throughout the structure.
- 16233 – A structure on the west side that has an office space and three bay areas. A paint booth, storage shed, a concrete area with an awning are on the center and eastern portion of the Property and a vacant area of land is located on the northern portion of this parcel. Several small empty containers of various motor oils and a drum ring were observed to the east of the paint booth. A three-stage clarifier was observed south of the awning area.

The southwestern portion of the Property (south portion of 16203) was developed as early as 1928 (apparently residential) at which time the remainder of the Property was vacant. Structures on the north end of 16203 and 16233 appeared to be present between 1938 and 1953; 16223 appeared to remain vacant during this time with the exception of dirt paths traversing it. The main structures at 16223 and 16233 were present by 1972 and the Property appeared to be heavily used for storage by 1981 thorough at least 1994. By 2005, the Property appeared vacant and similar to its current condition.

The surrounding area appeared largely scrub land and orchards through the 1950s, with some scattered small development areas and gravel pits. By 1964 the surrounding area was starting to be developed for commercial/industrial use and appeared similar to its current configuration by approximately 1990. In 1939, Arrow Highway was depicted historically as Bonita Avenue.

Records and documents reviewed indicate that all three parcels appeared to have septic tanks. SCS conducted a Phase II Investigation in September 2013 (SCS, February 2014) in the area of

the anticipated septic tank on 16223 (the location of the other septic tanks is unknown) and identified little to no impacts in the area. Assuming that the reported location for the septic tank is correct and that the leach field for this septic system is nearby, no further investigation is warranted for the septic tank at 16223. The presence of septic tanks on the Property remains a REC for 16203 and 16233.

A 1973 permit indicated installation of two USTs at 16203 (one additional UST was listed on a separate permit for this address but was determined to be off-site based on the associated plans). The UST plans indicate that the Property was once part of a larger facility occupied by Architectural Products Storage that extended well beyond the Property. The USTs were removed and subsequent sampling conducted in 1992. A no further action letter was issued by the LADPW in August 1993. The presence of these former USTs is a historical recognized condition (HREC).

Numerous tenants have occupied the Property including auto servicing, repairs, and sales; boat building operations; pool servicing company; enameling; precast concrete; garment manufacturing; welding; metal fabrication and metal grinding; and woodworking. A chlorine gas cylinder (one ton) & solution storage tank (500 gallons) associated with pool servicing was located at 16223 and three paint booths and a 1,200-gallon stormwater interceptor were present at 16233. A small oil spill from rain water over flowing from open 5-gallon pails that stored oil was reported for the site. Previous Phase II Investigations by SCS and Converse have included soil and soil vapor sampling across the Property and in areas identified as concerns and have found little to minimum impacts to the Property. Based on the results of the previous investigations, the Property has not been adversely affected as a result of these operations.

Based on known or likely original construction date for structures on the Property, it is possible that ACMs are present at the 16203 and 16223 parcels. Converse Consultants conducted an asbestos survey of the 16233 Property in 2004 and confirmed asbestos was present in the main building (western side of the parcel) and requires abatement.

The Property lies above the Baldwin Park OU (Area 2) of the San Gabriel Groundwater Basin Superfund Site. Groundwater in the area has been impacted by VOCs. Because the Property lies above a Superfund site, it is known that groundwater contamination is in the area and the Property has not been identified as a responsible party, therefore no additional impacts are anticipated from this facility.

Numerous tenants from the Property are identified on the CA WIP are associated with the Well Investigation Program as part of the San Gabriel Valley Superfund site. All are identified as historical and received a no further action status related to the Superfund site. In addition, several tenants are listed on the LACo HMS and HAZNET databases related to generation and disposal of hazardous materials associated with operations, unless otherwise indicated above, no further information was available.

A clandestine laboratory was identified in suite C in 1997. The site was reportedly cleaned up and laboratory waste chemicals were manifested for disposal. Wipe sampling was conducted as part of the investigation conducted by SCS in January 2014 and determined that although residual

methamphetamines were detected in Unit C of the structure, detections were well below the cleanup standard. The identification of a clandestine laboratory is an HREC.

Conclusions

In summary, SCS has performed a Phase I Environmental Site Assessment of the property located at 16203 through 16233 Arrow Highway, Irwindale, California, in conformance with the scope and limitations of 40 CFR 312 and ASTM E1527-13. In the opinion of the Environmental Professional, this assessment has revealed evidence of conditions indicative of recognized environmental conditions in connection with the Property, as discussed above and recommends the following:

- Asbestos abatement (and additional sampling if necessary) should be conducted prior to demolition of the structures on the Property.
- Sampling of the soil stockpile observed at 16203 is recommended to characterize the material and determine its waste characteristics.
- When the locations of the septic tanks are determined during demolition and grading of the Property additional investigation of these areas may be warranted.
- Although the 1,200-gallon clarifier (or stormwater interceptor) was reportedly closed in place and has been investigated, SCS recommends that the removal of the clarifier be conducted under LADPW oversight.
- An attempt to retrieve the analytical laboratory report for soil vapor data collected at 16233 (by Converse) in 2004 should be made. The report should be reviewed to determine if the detection limits were adequate to determine if VOCs are present and/or evaluate any associated health risks. If the laboratory cannot be provided, further evaluation is warranted.
- Review of the RWQCB files should be conducted in attempt to review any missing files or information not included in the previous Converse Phase I ESA's.

Data Gaps

The following data gaps were identified:

- The date of first development of the Property could not be determined. Based on the historical data available, this is not considered a significant data gap.
- The User questionnaire was not returned to SCS for review; however, given the well documented historic use of the Property, this is not considered a significant data gap.
- A response to the file requests was not received from the RWQCB prior to completion of this report.

- Review a previous Phase I ESA for 16233 (Converse, June 2004) indicated there were three associated files at the RWQCB, two were reviewed and the third of which was not available for review and is considered to be a data gap.

- Review of a previous Phase II (Converse, September 2004) one VOC (trichlorofluoromethane) was detected in soil vapor at a reported concentration of 1.7 milligrams per liter. A summary table of the data and the associated laboratory report were not included in the report and could not be reviewed to verify the data, reporting units, and detection limits. The exclusion of this information is considered to be a data gap.

1 INTRODUCTION

SCS Engineers (SCS) was retained by Irwindale Housing Authority (the "User") to prepare a Phase I Environmental Assessment of the property located at 16203-16233 Arrow Highway (Hwy) in Irwindale, California (the "Property"). A location map for the Property is presented as **Figure 1** in **Appendix A**. This assessment was performed in conformance with 40 CFR 312, Standards for Conducting All Appropriate Inquiries, and in general conformance with ASTM E1527-13.

2 PURPOSE

The purpose of this investigation was to identify conditions indicative of releases or threatened releases of hazardous substances as defined in CERCLA section 101, and petroleum products, on, at, in, or to the Property.

This assessment is intended to constitute appropriate inquiry into the previous ownership and uses of the property, as required to support the assertion of the innocent landowner, contiguous property owner, and/or bona fide prospective purchaser defenses to liability (collectively the landowner liability protections, or LLPs) under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA a.k.a. Superfund), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA) and the Small Business Liability Relief and Brownfields Revitalization Act of 2002.

If known or suspected contamination is identified, Users seeking to maintain LLPs have responsibilities in addition to completion of an AAI-compliant Phase I Environmental Site Assessment. These "continuing obligations" include taking "appropriate care" and "reasonable steps" with respect to known or suspected releases of hazardous substances during the term of property ownership. In addition to these requirements under Federal law, there are different requirements under state law with respect to liability protections. On request, SCS Engineers can provide support for clients with continuing obligations, as appropriate.

3 SCOPE OF SERVICES

This Phase I Environmental Assessment is based on:

- Interviews with past and/or present owners, operators, and/or occupants of the Property.
- Reviews of federal, tribal, state, and local government records.
- Visual inspections of the Property and adjoining properties performed on June 24, 2014.
- Review of historical Property use information (topographic maps, aerial photographs, fire insurance maps, existing reports, etc.).
- Commonly known or reasonably ascertainable information about the Property (e.g., interviews with appropriate regulatory agency personnel and review of agency files review of available documents, interviews with other knowledgeable persons).
- Degree of obviousness of the presence or likely presence of contamination at the Property, and the ability to detect the contamination by appropriate investigation.
- Information provided as a result of the additional inquiries conducted by the User.

4 SPECIAL TERMS AND CONDITIONS

This Phase I Environmental Assessment for 16203-16233 Arrow Hwy in Irwindale, California has been prepared specifically for the Irwindale Housing Authority. The report has been prepared in accordance with the care and skill generally exercised by reputable professionals, under similar circumstances, in this or similar localities. No other warranty, express or implied, is made as to the professional opinions presented herein.

No other party, known or unknown to SCS, is intended as a beneficiary of this work product, its content or information embedded therein. Third parties use this report at their own risk. Third party reliance letters may be issued on request to SCS subject to approval of the Irwindale Housing Authority and payment to SCS of a fee for such letters.

5 LIMITATIONS AND ASSUMPTIONS

The investigation focused on releases and threatened releases of hazardous substances or petroleum products that could be considered a recognized environmental condition and/or a liability due to their possible presence in significant concentrations (e.g., above acceptable limits set by the Federal or state government) or due to the potential for contaminant migration through exposure pathways (e.g., groundwater). Materials that may contain substances which are not currently deemed hazardous by the federal or state of California EPA were not considered as part of this study.

Unless specifically included in our scope of services, formal surveys for asbestos-containing materials, lead-based paints, fire safety, vapor intrusion, indoor air quality, mold, and similar matters were not part of this assessment. The Property was not evaluated for compliance with land use, zoning, wetlands, or similar laws. This report is not intended to be an environmental compliance audit.

Hazardous substances naturally occurring in plants, soils, and rocks (e.g., heavy metals, naturally occurring asbestos, or radon) are not typically considered in these investigations. Similarly, construction debris (e.g., discarded concrete, asphalt) is not considered to be of concern unless observations suggest that hazardous substances are likely to be present in significant concentrations.

Unless otherwise noted, sampling and laboratory analyses of soil, water, air, building materials, or other media, were not performed as part of this investigation. Positive identification of hazardous substances can only be accomplished through sampling and appropriate laboratory analysis.

SCS Engineers assumes no responsibility for the accuracy of information obtained from, compiled by, or provided by third-party sources, such as regulatory agency listings. Unless obviously inaccurate or if information exists to the contrary, SCS Engineers assumes that information collected during this environmental site assessment is accurate and correct. Unless warranted, information collected has not been independently validated as part of this assessment.

The following information is the responsibility of the User (40 CFR 312.22) and is not included in this Phase I Assessment Report:

- Specialized knowledge or experience of the User.
- The relationship of the purchase price to the fair market value of the Property. The purchaser of a Property is required to consider whether any differential between the purchase price and the fair market value of the Property is due to the presence of releases or potential releases of hazardous substances at the Property.

Certain other limitations could affect the accuracy and completeness of this report, as follows:

- Site Access Limitations – None
- Physical Obstructions to Observations – None
- Outstanding Information Requests – The Los Angeles Regional Water Quality Control Board (RWQCB) had not responded to the information request at the time this report was completed.
- Historical Data Sources Failure – The date of first development of the Property could not be determined.
- Other Limitations – Wind-blown dirt, vegetation, and debris across the Property obstructed views of underlying pavement. In addition, debris and the absence of light within the 16223 structure limited observations of the floor.

6 GENERAL SITE CHARACTERISTICS

SITE LOCATION

The Property is located at 16203-16233 Arrow Hwy in Irwindale on the north side of Arrow Hwy approximately 100 feet west of Morada Street. For the purposes of this report the Property parcels may be identified solely by their respective street numbers of 16203, 16223, and 16233. One additional historical address of 16229 Arrow Hwy was identified for the Property.

GENERAL SITE DESCRIPTION

The Property is comprised of three contiguous parcels approximately 6.26 acres in size and has been assigned Los Angeles County Tax Assessor's Parcel Numbers (APNs) 8619-010-907, 8619-012-905, and 8619-012-909 for 16203, 16223, and 16233 Arrow Hwy, respectively. The parcels are 3.43, 1.91, 0.92 acres in size for the above-referenced addresses, respectively. An APN map is provided as **Figure 2**.

The Property is currently vacant and has several structures remaining onsite that are in poor condition and have been vandalized.

ADJOINING PROPERTY USE

- North – Commercial/industrial business including Calwax at 5367 Ayon Avenue and Westwood Laboratories, Inc at 710/766 Ayon Avenue.

- East – A church, residences and vacant lot.
- South – Numerous commercial/industrial businesses , including: Target Molds & Plastics (16202 Arrow Hwy); Cat Specialties (16214 Arrow Hwy); 16222 Arrow Hwy had no signs depicting the occupant; Reliable Tools (16238 Arrow Hwy); and a vacant structure (16244 Arrow Hwy).
- West – 16035 Arrow Hwy had no signs depicting the occupant; DC America (16033 Arrow Hwy).

7 PHYSICAL SETTING

PHYSIOGRAPHIC SETTING

According to the U.S. Geological Survey (USGS), Baldwin Park, California 7.5-minute topographic map (1966, photorevised 1981), the Property is located in the San Gabriel Valley at an elevation of approximately 480 feet above mean sea level. Site topography is generally flat with a slight regional slope to the south/southwest. The Property is situated south of the San Gabriel Mountains and east of the San Gabriel River.

GEOLOGY AND SOILS

The surficial geological unit in the general area consists of boulders, sands, and gravels derived from the nearby San Gabriel Mountains located north of the Property.

GROUNDWATER

The Property is located in the San Gabriel Valley groundwater basin in the eastern portion of Los Angeles County. Based on review of groundwater monitoring data at the Azusa Land Reclamation Landfill, located approximately 0.40 miles to the north of the Property, groundwater in this area is located at approximately 290 feet below ground surface (bgs) and has fluctuated within a range of about 90 feet since 1984 in response to precipitation, extraction, and replenishment operations in the basin. Regional groundwater flow direction is anticipated to be westerly to southwesterly.

Groundwater in the San Gabriel Groundwater Basin is a primary drinking water source in southern California. However, industrial activity throughout the San Gabriel Valley has resulted in large areas of groundwater contamination by industrial chemicals, primarily volatile organic compounds (VOCs). In 1984, broad areas of the basin were named to the federal Superfund, or National Priorities List. Subsequently, the broader San Gabriel Valley Superfund Site was divided into Operable Units (OU), designed to more efficiently address individual areas of groundwater contamination. One of those operable units, the Baldwin Park OU (Area 2), encompasses the area of the Property. The updated 2012 simulated potentiometric surface maps in the area of the Property indicate groundwater is located approximately 241 to 242 feet above mean sea level. In addition, the 2012 plume maps depict the Property approximately 0.5 miles east of the mapped groundwater plumes associated with the Baldwin Park OU.

RADON

According to the California Department of Health Service's May 2010 Radon Program report, screening in the area of the Property (91706 zip code) found no locations (of 5 tested) that had radon levels greater than or equal to 4 pCi/L (the EPA action level). Based on the available information, therefore, elevated radon gas is not expected in the area of the Property.

8 SITE INSPECTION

An inspection of the Property and surrounding area was conducted on June 24, 2014, by Ashley Hutchens of SCS. Access to the Property was arranged by Mr. David Acero of Irwindale Public Works. An aerial photo and photographs of the Property are provided in **Appendix B**. **Figure 3** of **Appendix A** depicts the Property with current and historical features.

The Property consists of three vacated parcels and is currently occupied as follows:

- 16203 – A former dwelling that has recently burned. A small soil stockpile was observed on the south end just inside the gate and is discussed in a later section of this report. An asphalt drive runs up the east side of this parcel. A debris pile (concrete, wood, poles, etc.) was observed on the north end of the parcel.

- 16223 – A structure is present at the north end with an asphalt drive leading to it. The structure is divided into six units (A-F) that have been heavily damaged and vandalized with graffiti, skate board ramp, etc. Debris and paint cans are scattered throughout the structure.

- 16233 – A structure on the west side that has an office space and three automotive repair bay areas. A paint booth, storage shed, a concrete area with an awning on the center and eastern portion of the Property and a vacant area of land is located on the northern portion of this parcel.

HAZARDOUS SUBSTANCES

The Property is currently vacant and not hazardous materials were observed to be stored on-site. However during the site inspection, numerous spray paint cans were observed within the structure at 16223 where graffiti artists have painted. In addition, several small empty containers previously containing various motor oils and at least one ring evidencing past drum storage were observed at 16233.

NATURAL DRAINAGE

Natural waterways are not currently located on the Property. Storm water runoff would filtrate into the unpaved areas or run into several drains observed at 16233 or the surrounding streets.

DISTURBED AREAS

A majority of the Property is uneven rough ground with cobbles, however, no obvious disturbed areas were noted.

ELEVATORS AND OTHER HYDRAULIC EQUIPMENT

No elevators or other hydraulic equipment were observed.

WELLS

No evidence of monitoring or water supply wells was observed on the Property.

ELECTRICAL EQUIPMENT

Two pole-mounted transformers were observed on the Property at the northwest corner of the structure at 16223 Arrow Hwy. These transformers are operated by Southern California Edison (SCE).

SCE has indicated that all of their transformers have been tested, and any polychlorinated biphenyl (PCB) contaminated fluids have been replaced with mineral oil. Therefore, the transformers on the Property probably do not contain PCB-contaminated insulating fluids. In addition, no signs of leakage from the transformers were observed. Based on this information, no significant environmental impact to the Property is anticipated due to the presence of this equipment.

WASTEWATER

The Property is currently vacant; therefore industrial wastewater is not currently generated. However, a clarifier was observed at 16233 Arrow Hwy indicating that wastewater was previously generated on the Property.

DRINKING WATER

The Property is currently vacant, therefore, drinking water is not currently supplied to the Property. Water supply for the region is provided by Valley County Water District. All large public water suppliers in California have been required to test their water and comply with federal and state drinking water standards since the mid-1980s. Consequently, lead and other contaminants of concern are not expected to be present above applicable primary and secondary drinking water standards.

STORAGE TANKS

Aboveground storage tanks and evidence of underground storage tanks (USTs) were not observed on the Property during the site inspection. However, known historical USTs were present as discussed in a later section of this report.

ASBESTOS-CONTAINING MATERIALS (ACMS)

In general, buildings constructed before 1985 have a high potential for ACMs. The manufacture of most ACMs (except roofing tars/mastics) ended in the late 1970s. However, existing inventories of products could still be used. In addition, roofing tars and mastics can still contain asbestos. Thus, ACMs can be present in building materials regardless of age or date of construction (for example, in roofing felt, vinyl flooring, dry wall mud, etc.). Without sampling and analysis, it is not possible to definitely identify ACMs.

Based on known or likely original construction date for structures on the Property (discussed below), it is possible that ACMs are present at the 16203 and 16223 parcels. Converse Consultants conducted an asbestos survey of the 16233 Property in 2004 and confirmed asbestos was present in the main building (western side of the parcel).

VISUAL INSPECTION OF ADJOINING SITES

- North – Calwax was observed at 5367 Ayon Avenue and Westwood Laboratories, Inc was observed located at 710/766 Ayon Avenue. Both facilities are commercial/industrial; Calwax produces wax for various industries and processes and Westwood Laboratories is a contract manufacturer of personal care products.
- East – A church, residences and vacant lot were observed.
- South – Numerous commercial/industrial businesses were observed, including: Target Molds & Plastics (16202 Arrow Hwy); Cat Specialties (16214 Arrow Hwy; screen printing and embroidery); 16222 Arrow Hwy had no signs depicting the occupant; Reliable Tools (16238 Arrow Hwy); and a vacant structure (16244 Arrow Hwy).
- West – 16035 Arrow Hwy had no signs depicting the occupant; DC America (16033 Arrow Hwy)

No obvious indications of the use or storage of hazardous materials was observed at the above adjacent facilities during the site inspection.

9 INTERVIEWS

Mr. David Acero of Irwindale Public Works was interviewed during the site inspection. Mr. Acero indicated that an auto body and upholstery shops previously occupied the 16233 Arrow Hwy portion of the Property and that they relocated to 1st and Irwindale approximately 10 years ago (at his best guess). Mr Acero indicated that a small stockpile observed at 16203 Arrow Hwy had been illegally dumped in the street/sidewalk in front of the Property approximately a week prior to the site inspection. Public Works moved the stockpile onto the Property to get it out of the public right-of-way.

10 SITE HISTORY

Site history was evaluated from the following sources:

- Historic U.S. Geological Survey (USGS) topographic maps provided by Environmental Data Resources (EDR) (June 18, 2014).

- Historical aerial photographs dating from 1928, 1938, 1948, 1953, 1964, 1972, 1981, 1990, 1994, 2005, 2009, 2010, 2012 provided by Environmental Data Resources (EDR) (June 19, 2014).
- City of Irwindale Department of Building and Safety building permit information.
- A search was made of EDR-Sanborn collection and no maps of the Property were found.
- City Directory review report provided by EDR (June 19, 2014).

Copies of topographic maps, aerial photos, city directories, and building permits are included in **Appendix C**.

Year	Description	Source
1928	The southern half of 16203 appeared developed with several small structures (presumably dwellings) and the remainder of the Property appeared to be vacant. The area to the east appeared to be developed with numerous small structures, presumably dwellings. The surrounding area appeared to be vacant to the north and west; sparsely developed to the south/southwest; and orchard land farther the east/southeast.	Aerial Photo
1938	The southern half of 16203 appeared to have several structures and abundant trees surrounding them. The northern portion of 16203 was developed with structures and other features of undetermined use. 16223 appeared vacant. 16233 appeared to be developed with at least two or more long structures. The adjacent area north/northwest/west of 16203 appeared to be graded with roads surrounding the areas and no readily discernable structures were visible. With the exception of indications of several gravel pits to the south, the remaining surrounding area appeared similar to the 1928 photo.	Aerial Photo
1939	Arrow Highway was depicted historically as Bonita Avenue. Several small structures were depicted on the west side of the Property and directly adjacent to the east of the Property (including a church that remains today).	Topographic Map
1948	The Property appeared similar to the 1938 photo with the exception of dirt roads (or paths) appeared visible traversing the Property. Only one possible structure is visible at 16233 and may be surrounded with concrete. The graded area surrounding the north end of 16203 was no longer present. The remaining surrounding area appeared similar to the 1938 photo.	Aerial Photo

Year	Description	Source
1953	The southern portion of 16203 appeared to remain developed with numerous structures and surrounding trees and the northern portion appeared to have a structure and concrete areas or other features. 16223 appeared to remain vacant with dirt paths traversing it and 16233 appeared similar to the 1948 photo. A permit indicated use of a structure of 16203 was residential, likely referring to the structure on the southern portion of the Property. A large structure was present west of the Property, otherwise the surrounding area appeared similar to the 1948 photo. The road south of the Property was depicted as Arrow Highway (formerly Bonita Avenue). The Azusa Valley Sanitarium was depicted northeast of the Property. Scrub land was also depicted to the north. Several gravel pits and orchards were depicted in the surrounding area.	Aerial Photo, Topographic Map, Building Permits
1957	A letter was on file approving a 750 gallon septic tank (with effluent discharging into a seepage pit) for auto supply building at 16233. Claude Russing was listed as an occupant of 16203 (through at least 1960). Arrow Automotive Service was the occupant at 16233 and remained present until they relocated in approximately 2004-2005.	Building Permits, City Directories
1960	Eastside Automotive Service (along with Arrow Automotive) was listed at 16233 (through at least 1975).	City Directories
1964	The southern portion of 16203 appeared to be cleared of some trees and a couple small structures were visible. The southern portion of 16233 had a new structure present which appeared to be surrounded by vehicle parking or storage. The remainder of the Property appeared predominately vacant, however undetermined features appear visible on the northern portion of 16203 (different that previous photos). The surrounding area has been more widely developed for commercial/industrial use. A large storage tank was visible west of the northwest corner of the Property.	Aerial Photo

Year	Description	Source
1966	A temporary permit was issued by the fire prevention bureau for 16223 to allow up to 6 months of limited storage & handling of flammable liquids in boat building operations (fiberglassing). An associated figure depicted occupants of the Property as Transport International Pool (16203), Eastside Auto Service/DiShanni (16223), and Faris Beckstorm (16233). An additional structure was depicted on the east side of Property (three remain on the west side). The scrub land and orchard land were no longer present and the surrounding area appeared to have been urbanized. Kimton Engineering Co, Majestic Transmission Serv, and Nordic Boat Co were listed as occupants of 16223. Haley & Haley Transportation Service occupied 16229 Arrow Hwy.	Building Permits, Topographic Map, City Directories
1972	The structure and asphalt drive currently at 16223 and structure at 16233 were present, vehicles appear to be parked on these two parcels. 16203 appeared similar to the 1964 photo. The topographic map appeared similar to 1966 and area surrounding the Property appeared similar to the 1964 photo.	Topographic Map, Aerial Photo
1973	Two permits were on file for installation of three USTs at 16203. Based on plans associated with these permits, it appears that the two tanks (4,000-gallon diesel and 10,000-gallon gasoline) were installed on the Property, which had the same configuration as it exists today. The plans indicate this portion and adjacent area to the north/northwest were related to Architectural Products Storage and a third UST (10,000-gallon diesel) was installed offsite to the northwest and is unrelated to the current Property.	Building Permits
1975	Western Precast, Inc was listed as an occupant of 16203. Industrial Enameling was listed as an occupant of 16223.	City Directories
1979	A permit indicated an additional office building was constructed behind the current building at 16203.	Building Permits

Year	Description	Source
1980	A permit for 16223-C indicated garment manufacturing by Men's Fashions. Design Space international was listed as an occupant of 16203. Eastside Automotive Service, J&S Tool & Die Co (through at least 1995), Van Har Enterprises Inc were listed at 16223. In addition to other automotive services, Major Muffler was listed as an occupant of 16233 (through at least 1985).	Building Permits, City Directories
1981	The previously identified structures remained present, however the storage of vehicles and other larger features (potentially motor homes on 16203) were stored on the Property. The surrounding area was more widely developed for commercial/industrial use.	Topographic Map, Aerial Photo
1983	A permit identified a tank for chlorine & solution storage at 16223. An associated sketch indicated the current structure at 16223 was present and the remainder was used as storage lots with one small structure depicted at the southeast corner.	Building Permits
1984	A permit for a foundation for a one ton gas chlorine cylinder and 500 gallon holding tank was on file for 16223.	Building Permits
1985	Permits for 16223 indicate Rives Enterprises conducted welding and metal fabrication at Unit F and D.I. Buchanan conducted "thread grinder metal parts" at Unit D. Gelco Space was listed as an occupant at 16203. Century Roofing Co, Eastside Automotive Service, Irwindale Chamber of Commerce and Rives Enterprises (through at least 1995) were listed at 16223. Buchanan DI Thread Grinding occupied 16223-D. Best Buy Auto Sales occupied 16223-G	Building Permits, City Directories
1987	A permit for 16223-A identified Curbmate by Borders, a business that conducted maintenance and storage of company vehicles and equipment.	Building Permits
1990	The Property structures appear similar to the 1981photo, however remainder of the entire Property appears to be used for storage or occupied by other undetermined features. The surrounding area has been completely developed and appeared similar to the current configuration.	Aerial Photo

Year	Description	Source
1991	Permits for 16223 indicated operations by Rives Enterprises (Unit F - metal fabrication), Buchanan Grinding, and Service in Advance (repair floor machines). A permit for 16233 was on file for a new paint booth (one existing) and reports/complaints were made that spraying occurred outside of the booths.	Building Permits
1992	A permit for 16223 reported electric motor repairs at that location.	Building Permits
1994	The Property and surrounding area appeared similar to the 1990 photo.	Aerial Photo
1995	Curb mate by Garden Enterprises, Redesi Inc, Service in Advance were listed at 16223. Hallmark Auto Sales occupied 16233G (this appears to be a typo and should reference 16223-G). In addition to Arrow Automotive, B&L Auto Specialists & Towing was listed at 16233.	City Directories
1996	An inspection report for B&M Asphalt at 16223 indicated an oil spill occurred caused by rain water overflowing from open 5-gallon pails that stored oil. A second inspection reported that the spill had been cleaned up. A sketch map of 16223-A indicates a Radiator Shop with a sump in the southeast corner that led to a septic tank via a sewer line. A permit indicates woodworking operations and duct collection equipment at 16223-D.	Building Permits
2000	A permit identified Mac's Saw as an occupant of 16223,which conducted saw sharpening, motor bits, drill bits.	Building Permits
2004	The Property and surrounding area appeared similar to their current configuration. The Property appeared vacant with asphalt drives and several structures.	Aerial Photo
2005	An application for closure of the stormwater interceptor, and hazardous waste manifests (solid aluminum frames, lead), and non-hazardous manifest (clarifier wastewater, asbestos) for 16233 were on file.	Building Permits
2008	Robert A Faris, Inc. was listed at 16233. The surrounding area is heavily commercial/industrial, including machinery operations, tooling, mechanical, molds/plastics, auto maintenance, etc.	City Directories

Year	Description	Source
2009, 2010, 2012	The Property and surrounding area appeared similar to their 2004 photo.	Aerial Photo

HISTORICAL USE SUMMARY

The southwestern portion of the Property (south portion of 16203) was developed as early as 1928 (apparently residential) at which time the remainder of the Property was vacant. Structures on the north end of 16203 and 16233 appeared to be present between 1938 and 1953; 16223 appeared to remain vacant during this time with the exception of dirt paths traversing it. The main structures at 16223 and 16233 were present by 1972 and the Property appeared to be heavily used for storage by 1981 thorough at least 1994. By 2005, the Property appeared vacant and similar to its current condition.

In addition, historical review found the following:

- Records and documents reviewed indicate that all three parcels appeared to have septic tanks.
- A 1973 permit for the installation of two USTs at 16203 (one additional UST was listed on a separate permit for this address but was determined to be off-site based on the associated plans). Based on the UST plans, the Property was once a portion of a larger operation by Architectural Products Storage that extended beyond the Property to the north.
- Numerous tenants have occupied the Property including auto servicing, repairs, and sales; boat building operations; pool servicing company; enameling; precast concrete; garment manufacturing; welding; metal fabrication and metal grinding; woodworking
- A chlorine & solution storage tank associated with pool servicing was located at 16223. A permit for construction of a foundation constructed for this equipment identifies a one ton gas chlorine cylinder and 500 gallon holding tank.
- Three paint booths and a stormwater interceptor were present at 16233.
- A small oil spill from rain water over flowing from open 5-gallon pails that stored oil.

HISTORICAL USE OF ADJOINING SITES

The surrounding area appeared largely scrub land and orchards through the 1950s, with some scattered small development areas and gravel pits. By 1964, the surrounding area was starting to be developed for commercial/industrial use and appeared similar to its current configuration by approximately 1990. In 1939, Arrow Highway was depicted historically as Bonita Avenue.

11 COMMONLY KNOWN OR REASONABLY ASCERTAINABLE INFORMATION

In order to identify commonly known or reasonably ascertainable information about the Property, SCS reviewed previous environmental reports and various regulatory agency files and interviewed regulatory agency personnel. The following information was identified.

PREVIOUS ENVIRONMENTAL REPORTS

As part of this assessment the following reports were reviewed:

- *Phase I Environmental Site Assessment (ESA) Report, Arrow Automotive Service, 16233 East Arrow Highway, Irwindale, California* prepared by Converse Consultants dated June 1, 2004.
- *Phase II Environmental Site Assessment Report, 16233 East Arrow Highway, Irwindale, California* prepared by Converse Consultants dated September 22, 2004.
- *Update, Phase I Environmental Site Assessment (ESA) Report, 16203 and 16223 Arrow Highway, Irwindale, California* prepared by Converse Consultants dated May 1, 2013.
- *Phase II Investigation Report, 16203-16223 Arrow Highway, Irwindale, California* prepared by SCS Engineers, dated February 4, 2014.

Converse Consultants

Phase I ESA – 16233 East Arrow Highway (June 1, 2004)

SCS conducted a review of the previous Phase I ESA (16223 East Arrow Hwy only) which identified the following:

- The site inspection identified the following:
    - The site was occupied by Arrow Automotive Service that conducted auto body repair. Three bays were used for: 1) mechanical work (oil changes, engine rebuilding, and transmission work); 2) bodywork; and 3) finishing stages of bodywork.
    - A drum storage building was located near the northeast corner of the main building (approximately 200 square feet in size) and stored 55-gallon drums.
    - Various other drum storage areas throughout.
    - Three paint spray booths on the northern portion of the site.
    - Car wash area near the northeast corner of the site.
    - Two sheds for storage of car parts one of which also housed 55-gallon drums.
    - A 1,200-gallon clarifier which was reportedly not installed according to approved plans.
    - Surface staining.
- The site was occupied by an automotive service facility since at least 1957.
- The facility was cited for illegal disposal of antifreeze, waste oil, and waste paint.

- As part of the Well Investigation Program, the RWQCB observed evidence of an oil discharge in 1995 to an earthen ditch reportedly located in front of B&L Specialties (adjoining the site and operated by the same owner).
- Asbestos and lead-based paint surveys were conducted and results indicated both were found on the site and would require abatement.

Review of files at the RWQCB during this ESA for 16233 indicated three files were present, however, only two were available for review for Arrow Automotive and B&L Specialties, both of which included no further action letters with relation to the Well Investigation Program (WIP).

Chemical use and storage and inspection questionnaires for Arrow Automotive indicated the presence of an industrial sewer system and use of paint reducer, paint thinner, paint, safety kleen solvent, enamel reducer and lacquer thinner. A drum storage area was noted along with metal and painting work. A septic tank was reportedly on the Property. Staining was observed in an earthen ditch covered with a grate in front of the adjoining B&L Specialties facility.

Chemical use and storage and inspection questionnaires for B&L Auto Specialties (reportedly same owner as Arrow Automotive) indicated the presence of a parts washer with solvent and had a drum storage area. B&L used two spray booths, safety kleen solvent, lacquer thinner, Freon, gas/oil (although no USTs or ASTs were identified).

Converse concluded that based on the above recognized environmental conditions (RECs), further assessment was warranted.

Phase II ESA - 16233 East Arrow Highway (September 22, 2004)

Based on the above conclusions of the Phase I ESA conducted at 16233, Converse conducted a Phase II investigation in August 2004 consisting of soil and soil vapor sampling. The 16233 site was divided into a 24-point grid system, if no concerns were identified within a particular grid, a soil vapor sample was collected (10 samples were collected) at depths of 5 or 10 feet bgs and analyzed for VOCs. Of the ten samples collected , Only one point (SG-2) had a detection of trichlorofloromethane (1.7 milligrams per liter) and, therefore, soil samples were collected at this location (SG-2) from 1-, 5-, and 10-feet bgs for analysis of VOCs, none of which were detected. It should be noted that during SCS's review it was observed that a table summarizing the soil vapor data and the associated laboratory analytical report were not included in Converse's report.

In addition, 17 soil borings (to depths of 5-, 10-, or 15-feet bgs with samples collected at the 1-foot depth and 5-foot intervals thereafter) were drilled at locations of concern identified during the Phase I ESA and were selectively analyzed for VOCs, semi-volatile organic compounds (SVOCs), total petroleum hydrocarbons (TPH), polychlorinated biphenyls (PCBs), and/or metals. Results of soil sampling indicated the following:

- No VOCs, PCBs, or gasoline range TPH were detected in any samples analyzed for these parameters.
- The SVOC, bis(2-ethylhexyl)phthalate was detected in 7 samples across the site at concentrations of 0.353 to 4.54 milligrams per kilogram (mg/kg). These concentrations

were below the residential Preliminary Remediation Goal of 35 mg/kg (currently referred to as Regional Screening Level [RSL] of 38 mg/kg).

- Diesel and heavy range TPH were detected in 3 and 6 samples at concentrations ranging from 5.86 to 539 mg/kg and 8.44 to 1,800 mg/kg, respectively. These concentrations were below the soil screening levels (SSLs; established by the RWQCB) of 1,000 and 10,000 mg/kg for diesel and heavy range TPH, respectively.
- Barium, chromium, and lead were detected at concentrations below their respective PRGs (as of 2004 and below current RSLs) but above the indicator of ten times their respective Soluble Threshold Limit Concentrations (STLC). Additional STLC analysis was conducted on these samples and all resulted in a concentrations below their STLC limits.

Based on the above results (all below regulatory threshold limits or clean-up levels), Converse concluded that no further assessment appeared warranted. They recommended that the clarifier be abandoned or removed prior to the City's acquisition of the Property.

Draft Phase I ESA – 16203 and 16223 Arrow Highway (March 1, 2011)

The report provided to SCS for review was not finalized and conclusions were revised for the May 2013 update discussed below, however, files pertaining to the Property were reviewed as part of this draft report and are summarized as follows:

Review of files at the RWQCB during this ESA for 16203 and 16223 indicated a chemical use and storage questionnaire and inventory checklist dated November 29, 1990 for Gelco Space at 16203 indicating no generation, treatment, storage, disposal, or transporting activities or permits were taking place and that the site use was for mobile home storage which occupied the Property since 1979. Paints and floor cleaners were observed during the inspection.

An inspection checklist dated August 23, 1990 for 16223 reported occupancy by, a pool service company (All American Pool Service). Chlorine was stored in 20,000 cubic foot steel gas canisters and transferred to smaller tanks of approximately 50 cubic feet for distribution to private pools. The chlorine gas was dissolved in liquid water solution stored in 500-gallon aboveground tank. Converse reported that, in addition to the above-listed gas, a hazardous materials inventory dated December 11, 1981 listed 400 gallons of sodium hypochlorite, 2,000 pounds of sodium sesquicarbonate, and 50 gallons of sodium hydroxide caustic soda.

An inspection checklist dated June 21, 1990, for J&S Tool & Die Co. (16223), identified the presence of a small machine shop, reportedly operating since 1979 and included the use and storage of limited quantities of water soluble cutting oil, machine oil, and lube tag oil. The inspection indicated that no wastes were stored or generated from the business; however, fiberglass waste products from a previous auto restorer tenant were noted on the fence.

An inspection checklist dated August 23, 1990, for D.I. Buchanan (16223 #D), reported the presence of a grinding shop where use and storage of small quantities of water soluble cutting oil and mineral spirits were observed. Oil-stained asphalt was observed behind the shop with water discharge from a swamp cooler. The source of the stain was reported as unknown and that the area may possible have been a former chemical storage area (it is unclear if this was a statement as part of the inspection or an assumption made by Converse). It was noted that a subsurface investigation may be required. A subsequent letter dated March 22, 1995 from the RWQCB to

Service in Advance Floor Machines (the tenant of the space at that time), indicated that this facility was not a threat to underlying ground water.

An inspection checklist dated August 23, 1990, for Best Buy Auto Sales (16223 #G), reported a small independent auto/truck sales facility had been present since 1984 (the prior tenant was a car sales lot). A 20 gallon barrel of waste oil was observed stored on dirt with no secondary containment. It was recommended that the barrel be moved to a covered area and catch pans and/or secondary containment be provided.

Letters were issued from the RWQCB and the US EPA in 1995 and 1996 regarding the San Gabriel Valley Superfund Sites 1-4 stating that no further action was planned for All American Pool Services, J&S Tool and Die Co., Service in Advance Floor Machines, and Best Buy Auto Sales, and these companies were no longer part of the Superfund process.

Update, Phase I ESA – 16203 and 16223 Arrow Highway (May 1, 2013)

SCS conducted a review of a previous Phase I ESA prepared for 16203 and 16223 Arrow Hwy (16233 Arrow Hwy was excluded) which identified recognized environmental conditions (RECs) associated with the Property and provided the following opinion:

- The Property's historical uses are considered a REC.
- The Property's use of historical underground storage tanks (USTs) is considered a REC.
- The identification of a historical drug (clandestine) lab is a REC, due to the hazardous chemicals used and generated.
- Various adjacent properties were identified as hazardous materials generators and WIP sites. These adjacent properties are RECs.
- The location of the Property within the San Gabriel Valley (Area 2) NPL site is a REC. However, the Property has not been identified as a Potentially Responsible Party.
- No significant data gaps were identified that affect the ability to the Environmental Professional (EP) to identify RECs.
- There are no unusual circumstances where greater certainty is required regarding the RECs.

The conclusions of the Phase I report prepared by Converse Consultants stated "Based on the findings of this assessment, further assessment appears to be warranted at this time for general screening of the Property."

SCS Engineers

Based on SCS's review of the information in Converse's Updated Phase I report, SCS proposed and conducted a soil and soil vapor investigation (September 2013) at 16203 and 16223 Arrow

Hwy (16233 Arrow Hwy was excluded) to address potential releases of hazardous materials associated with the historical use and past operations. In addition, wipe sampling was conducted (January 2014) within the structure identified as a clandestine laboratory for analysis of methamphetamine residue. The investigations found the following:

- **Soil** – Low concentrations of TPH in three of 22 samples, and VOCs in one of 8 samples, were detected at the Property. Concentrations detected were well below the applicable regulatory screening guidance levels (soil screening levels [SSLs] for TPH and regional screening levels [RSLs] for VOCs).

  All metals detected in the samples analyzed were within the typical background range for California soils (Bradford, et.al., 1996) and well below their respective residential CHHSLs. No organochlorine pesticides were detected in three samples analyzed.

- **Soil Vapor** – Toluene was detected in all of the soil vapor samples at concentrations ranging from 0.012 to 0.205 micrograms per liter (µg/l), well below the residential California Human Health Screening Levels (CHHSL) of 135 µg/l. In addition, single detections of xylenes and chloroform were detected in B1(sv), of tetrachloroethene in B7(sv), and of ethylbenzene in B12(sv). Each of these detections were at concentrations well below their respective CHHSLs.

- **Wipe Samples** – Methamphetamine residue was detected in 3 of 18 samples collected in the structure at 16223 Arrow Hwy where a former clandestine laboratory was reported. Reported information suggests that the clandestine laboratory was within Unit C. The three samples (W7, W8, and W10) with detected concentrations of methamphetamine were all collected from walls within Unit C. Detected concentrations of methamphetamine residue range from 0.13 to 0.17 micrograms per one hundred square centimeters (µg/100 cm^2), and are well below the DTSC cleanup standard for methamphetamine of 1.5 µg/100 cm^2.

Based on the results of this investigation, SCS concluded that there has been no to minimal impact to the Property at 16203-16223 Arrow Hwy from previous operations and historical uses identified as RECs during the Phase I Investigation including the following:

- The historical occupation by industrial companies (Vinnell Steel, Western Precast International, and Gelco) of the Property's western parcel,

- The Property's historical use for auto repair, woodworking, manufacturing, and chemical storage,

- The Property's identification as a clandestine drug lab,

- Various adjacent properties were identified as hazardous materials generators and WIP sites.

SCS concluded that based on the results of this investigation, the Property has not been adversely affected as a result of the recognized environmental conditions previously identified by Converse in their 2013 Phase I Assessment. Therefore, further investigation was not recommended.

REGULATORY AGENCY RECORDS

Local regulatory agencies and other sources were contacted in an effort to identify any known or suspected contamination sites or incidents of hazardous waste storage or disposal which might have resulted in soil or groundwater contamination within a one-mile radius of the Property. Within this area of the City of Los Angeles Department of Public Works (LADPW) generally acts as the lead enforcement agency for underground storage tank compliance. If a tank has leaked and groundwater contamination is suspected, the Los Angeles Regional Water Quality Control Board (RWQCB) generally becomes the lead agency in supervising contaminant characterization and cleanup.

Files were requested from the LADPW and RWQCB for the Property. At the time of preparation of this report, a response from the RWQCB has not been received. However, a review of the RWQCB files was conducted during previous Phase I's as summarized above.

Los Angeles Department of Public Works

Files pertaining to the Property were on record for 16203 and 15233 Arrow Highway. Copies of pertinent files are included in **Appendix D**.

16203 Arrow Highway

A UST closure report (Environ, October 26, 1992), was on record for the removal of one 5,000-gallon gasoline tank and one 10,000-gallon diesel tank and associated dispenser island and piping. Note that the gasoline tank was previously identified on plans as a 4,000-gallon UST. The figure in the report indicated that the USTs were located 500 feet to the north of the southern Property line. Soil samples were collected from beneath the ends of each UST, piping, and fuel dispensers and found no significant concentrations of TPH, VOCs, or organic lead and no further investigation was recommended. The LADPW issued a no further action letter dated August 17, 1993.

16223 Arrow Highway

The LADPW has record of a file for 16223, however when requested, personnel indicated that the case is related to stormwater and therefore there is no file for it. However review of the previous Phase I indicated there was a file that had paperwork related to an oil spill at B&M Asphalt for which a violation correction worksheet was completed.

16233 Arrow Highway

Two files associated with this address were on record at the LADPW. Both files were associated with the clarifier on the Property. The first was related to a complaint in 1999 that the Arrow Automotive facility was illegally discharging waste oil, antifreeze and waste paint to a dirt sump which was pumped to the street. The complaint resulted in inspections by the LADPW and

subsequent application for an industrial waste permit (May 2001) for parts cleaning/paint operation. A September 2002 inspection indicated that the interceptor was not built according to approved plans. In 2005, an industrial waste disposal permit was issued for a 1,200 gallon stormwater interceptor (or "clarifier").

The second file was related to the closure of the SW interceptor. An inspection form dated November 28, 2007 indicated that the interceptor was closed-in place without permits. An application was later submitted by the Irwindale Community Redevelopment Agency for "in-place" closure of the SW Interceptor dated December 13, 2008. Hazardous waste manifests documented the disposal of waste oil, paint booth filters, gasoline and diesel (from a 55-gallon drum), drum oil filters, filter cake, cyanide, and lacquer thinner paint. As previously discussed the clarifier still remains onsite.

South Coast Air Quality Management District

The SCAQMD's Facility INformation Detail (FIND) website was reviewed and found the following:

- Western Precast Inc. at 16203 listed as out of business
- The All American Pool Service facility (listed as out of business at 16223) had an application for their chlorine storage tank from 1988.
- Rives Ent. At 16223 is listed as active, however no equipment is listed as associated with the facility.
- Robert A. Faris Inc, Arrow Automotive Ser is still listed as an active facility however the following five associated permits are all listed as inactive:
    - 1979 – Spray Booth Paint and Solvent
    - 1982 – Spray Booth Paint and Solvent
    - 1992 – Spray Booth Paint and Solvent
    - 1992 – Spray Equipment Open
    - 2003 – Spray Booth, Automotive

A notice to comply was issued with a violation date of 10/31/2000 for expiration of permits to construct and posting of permit to operate. A subsequent inspection on 11/21/2000 found the facility to be in compliance.

12 REVIEW OF FEDERAL, STATE, TRIBAL, AND LOCAL GOVERNMENT DATABASES

A database search for sites listed on various federal, state, tribal, and local databases in the area around the Property was obtained from EDR (June 17, 2014). A description of each of the databases searched is included in the report, which is attached as **Appendix E**. Among the databases included in the EDR report are NPL (federal, tribal, and state-equivalent), proposed and delisted NPL, CORRACTS (RCRA facilities subject to corrective actions), hazardous waste sites identified for investigation or remediation (CERCLIS, State CERCLIS, VCP, Brownfields Calsites, etc.), LUST, sites with engineering controls, former CERCLIS (NFRAP), RCRA and state hazardous waste generators, ERNS, SWLF, USTs, and Toxic Pits.
Review of these records satisfies all requirements as set forth in 40 CFR Section 312.26 (b) and (c) with regard to the review of federal, tribal, and state government records of databases of such government records and local government records and databases of such records pertaining to

both the subject property and the nearby or adjoining properties. Further, the search distances for each particular database are as specified in 40 CFR 312.26 and ASTM E1527-13.

Any known or suspected contaminated sites included on these lists within 0.25 miles of the Property are discussed in the following text. As a general rule, sites beyond 0.25 miles are not anticipated to impact a site significantly. Any sites beyond 0.25 miles with a high potential to impact the Property are also discussed. (Please note: the distances and directions listed in this report have been field verified and might not always match those in the EDR report.)

Sites such as TSD facilities, hazardous waste generators, HAZNET, FINDS, SQGs, LQGs, USTs, HIST UST, RCRA violations, and TRIS facilities with toxic chemical releases (generally in accordance with permitting requirements - into the air, water, or land as reported under SARA Title III) use or store hazardous materials and thus may pose a potential problem in the event of a spill or leak. However, unless these sites also appear in an agency list of contaminated sites, there is no evidence of any problems at this time. Therefore, sites on these lists will not be discussed unless on or in close proximity to the Property.

Please refer to **Appendix E** for further information on these sites.

PROPERTY LISTINGS

The Property is listed on numerous database listings as follows:

<u>16203 Arrow Highway</u>

- Gelco Space – (LACo HMS, CA WIP-historical)

<u>16223 Arrow Highway</u>

- Bldg C – (CA CDL [illegal drug lab]) –clandestine laboratory identified in suite C in 1997.
- Steven Vacvana – (HAZNET) for disposal of laboratory waste chemicals, likely associated with the illegal drug lab.
- All American Pool – (CA WIP, historical, SSTS) – This facility is listed on the Section 7 Tracking Systems database of the Federal Insecticide, Fungicide, and Rodenticide Act indicating each establishment must report types and amounts of pesticides, active ingredients, and devices being produced. This facility was on the database for use of chlorine gas.
- City of Irwindale Public Works – (HAZNET)
- B&M Asphalt (LACo HMS, CA WIP-historical)
- Serv. In Advance Floor Machine, Best Buy Auto Sales, Suite G, , J&S Tool & Die, and Garden Enterprises – (CA WIP, historical)

16233 Arrow Highway

- IDR Environmental Services Inc – (FINDS, HAZNET)
- Arrow Automotive Serv – (CA EMI, RCRA-SQG, FINDS, CA WIP, LACo HMS, HAZNET, Hist Auto Stat) disposed of oxygenated solvents, unspecified solvent mixture, oily wastes, organic solids, waste/mixed oil, metal dust, hydrocarbon solvents,
- City of Irwindale – (LACo HMS)

All of the Property listings for CA WIP are associated with the Well Investigation Program as part of the San Gabriel Valley Superfund site. All are identified as historical and received a no further action status related to the Superfund site. The above LACo HMS and HAZNET listings appear related to generation and disposal of hazardous materials associated with operations, unless otherwise indicated above, no further information was available.

ADJACENT SITE LISTINGS

The following sites adjacent to the Property were identified on one or more of the standard environmental records:

- San Gabriel Valley – Area 2 (CA AOCONCERN, NPL, CERCLIS, US ENG CONTROLS, ROD, PRP) – As previously discussed, the Property lies above the San Gabriel Valley Superfund Site where groundwater has been impacted by VOCs. Facilities on the Property were involved in the WIP program associated with this superfund site and all were determined to be excluded as contributing parties.
- Numerous adjacent facilities were identified on the CA WIP database as historically being evaluated as part of the Superfund process.

OTHER DATABASE SITES

The EDR report provides a summary table of regulatory database sites within specified distances of the Property, including: 1. standard environmental records, 2. additional environmental records, and 3. high risk historical records. This summary table is provided beginning on page 4 of the EDR report (**Appendix E**). In addition to the Property and adjacent sites listings discussed above, SCS identified the following sites of concern within 0.25 miles of the Property:

- Air Cold Supply, 5403 Ayon Supply (CA SLIC, CA WIP) (315 feet north) – This facility is listed as an "open-site assessment" case for a release of VOCs into an aquifer used for drinking water supply. This facility is mapped on the State Water Resources Control Boards GeoTracker website at approximately two miles from the Property. Because the Property lies above a Superfund site, it is known that groundwater contamination is in the area and the Property has not been identified as a responsible party, therefore no additional impacts are anticipated from this facility.

- Granger's Air Conditioning (LUST) (0.13 miles east/southeast) – This facility reportedly had a release of "aviation" into soil and the case was closed in 1997. Based on distance, case type (soil only), and case status, impacts to the Property are not anticipated from this facility.
- Livingston-Graham-Irwindale, 16080 Arrow Highway (SWEEPS UST, LDS, LACo HMS) (0.14 miles west/southwest) – This facility is listed as an active SWEEPS UST facility, an inactive land disposal site, and a removed HMS facility. Records on Geotracker refer to Waste Discharge Requirements and other information unrelated to this facility. Based on distance and direction, impacts to the Property from this facility are not anticipated.
- Liquid Carbonic, 16125 Ornelas St (LUST) (0.17 miles northwest) – This facility reportedly had a release of diesel into soil and the case was closed in 1994. Based on distance, case type (soil only), and case status, impacts to the Property are not anticipated from this facility.

Other sites within 0.25 miles do not have known releases such as RCRA small quantity generators, HAZNET, FINDS, and USTs sites. None are known to have any contamination at this time; therefore, none are anticipated to have impacted the Property. Similarly, none of the sites situated beyond 0.25 miles are anticipated to have impacted the Property.

Unmappable or Orphan Sites

Twenty unmappable sites were identified in the EDR Report. Unmappable sites cannot be plotted due to inaccurate or incomplete addresses. Based on review of the provided data, including the estimated locations of the unmappable sites in relation to the Property, it appears unlikely that the unmappable sites have adversely affected the environmental condition of the Property.

LANDFILLS

Based on a review of the Major Waste Systems Map (June 1972) and EDR-provided Solid Waste Information System database, two facilities were identified within 0.5 miles of the Property.

Manning Bros. Rock & Sand Co. (Class III) located at 16158 E. Central Street (approximately 0.3 miles south of the Property) and Consolidated Rock Products Dump located at 15700 Arrow Hwy (approximately 0.47 miles west of the Property). In addition, an active gravel pit is depicted approximately 0.37 miles north of the Property, however the listing of the facility is not available. These facilities are both identified as Class III inactive sites and are not anticipated to impact the Property.

OIL AND GAS WELLS

Available oil and gas well maps from the California Department of Conservation, Division of Oil, Gas and Geothermal Resources (DOGGR) were reviewed to identify oil and gas wells on the Property or in the nearby area. According to the Digital Online Mapping System (DOMS 2.1) there are no oil or gas wells within one mile of the Property.

13 USER PROVIDED INFORMATION

A User Questionnaire was not returned to SCS for inclusion in the report. City of Irwindale provided no information beyond what is discussed above.

TITLE RECORDS

No title report was provided to SCS for review.

ENVIRONMENTAL LIENS OR ACTIVITY AND USE LIMITATIONS

No information regarding environmental liens or activity and use limitations was provided to SCS. No environmental liens or activity/use limitations were identified by SCS during the course of this assessment.

SPECIALIZED KNOWLEDGE

No specialized knowledge regarding the Property was provided to SCS by the User.

VALUATION REDUCTION FOR ENVIRONMENTAL ISSUES

No property valuation information was provided to SCS.

14 DEGREE OF OBVIOUSNESS OF THE PRESENCE/LIKELY PRESENCE OF CONTAMINATION ON THE PROPERTY

As discussed above, the Property was historically occupied by numerous tenants including auto servicing, repairs, and sales; boat building operations; pool servicing company; enameling; precast concrete; garment manufacturing; welding; metal fabrication and metal grinding; and woodworking. Historical records, document review, site inspection, and regulatory information have determined that a clarifier, septic systems, former USTs, chlorine gas cylinder /storage tank, hazardous materials use and storage, and a clandestine laboratory have been documented on the Property.

The USTs have been removed, sampling conducted and a no further action issued by the LADPW. Phase II Investigations have been conducted on the Property to address the other above listed concerns (with the exception of septic systems at 16203 and 16233, identified as a recognized environmental condition) found little to minimum impacts to the Property. Based on the results of the previous investigations, the Property has not been adversely affected as a result of the previously identified concerns and further investigation is not warranted at this time. However, SCS notes the following:

- Asbestos abatement (and additional sampling if necessary) should be conducted prior to demolition of the structures on the Property.

- Sampling of the soil stockpile observed at 16203 is recommended to characterize the material and determine its waste characteristics.

- Several septic tanks are present on the Property that may have received industrial wastes. The locations of the septic tanks and possible associated leach lines have not definitively been identified. When the locations of the septic tanks are determined during demolition and grading of the Property, additional investigation of these areas should be conducted to assess the potential for releases.

- Although the 1,200-gallon clarifier (or stormwater interceptor) was reportedly closed in place and has been investigated, SCS recommends that the removal of the clarifier be conducted under LADPW oversight.

- An attempt to retrieve the analytical laboratory report for soil vapor data collected at 16233 (by Converse) in 2004 should be made. The report should be reviewed to determine if the detection limits were adequate to determine if VOCs are present and/or evaluate any associated health risks. If the laboratory cannot be provided, further evaluation is warranted.

- Review of the RWQCB files should be conducted in attempt to review any missing files or information not included in the previous Converse Phase I ESA's.

15 DATA GAPS

A data gap represents an inability on the part of the environmental professional to obtain information required by the standards and practices of 40 CFR 312 to fully identify conditions indicative of releases or threatened releases of hazardous substances on, at, in, or to the Property.

The following data gaps were identified:

- The date of first development of the Property could not be determined. Based on the historical data available, this is not considered a significant data gap.
- The User questionnaire was not returned to SCS for review; however, given the well documented historic use of the Property, this is not considered a significant data gap.
- A response to the file requests was not received from the RWQCB prior to completion of this report.

- Review a previous Phase I ESA for 16233 (Converse, June 2004) indicated there were three associated files at the RWQCB, two were reviewed and the third of which was not available for review and is considered to be a data gap.

- Review of a previous Phase II (Converse, September 2004) one VOC (trichlorofluoromethane) was detected in soil vapor at a reported concentration of 1.7 milligrams per liter. A summary table of the data and the associated laboratory report

were not included in the report and could not be reviewed to verify the data, reporting units, and detection limits. The exclusion of this information is considered to be a data gap.

16 FINDINGS AND OPINIONS

Based on the scope of work performed, SCS finds the following:

- The Property is located at 16203-16233 Arrow Hwy in Irwindale on the north side of Arrow Hwy approximately 100 feet west of Morada Street. The Property is comprised of three contiguous parcels approximately 6.26 acres in size and has been assigned Assessor's Parcel Numbers (APNs) 8619-010-907, 8619-012-905, and 8619-012-909 for 16203, 16223, and 16233 Arrow Hwy, respectively. The parcels are 3.43, 1.91, 0.92 acres in size for the above-referenced addresses, respectively.

- The Property consists of three vacated parcels and is currently occupied as follows:

    - 16203 – A former dwelling that has recently burned. An asphalt drive runs up the east side of this parcel. A debris pile (concrete, wood, poles, etc.) was observed on the north end of the parcel. A small soil stockpile was observed on the south end just inside the gate. The stockpile was reportedly illegally dumped on the street and moved onto the Property by Irwindale Public Works. The unknown origin of the stockpile is a recognized environmental condition (REC).

    - 16223 – A structure is present at the north end with an asphalt drive leading to it. The structure is divided into six units (A-F) and has been heavily vandalized with graffiti, skate board ramp, etc. Debris and paint cans are scattered throughout the structure.

    - 16233 – A structure on the west side that has an office space and three bay areas. A paint booth, storage shed, a concrete area with an awning are on the center and eastern portion of the Property and a vacant area of land is located on the northern portion of this parcel. Several small empty containers of various motor oils and a drum ring were observed to the east of the paint booth. A three-stage clarifier was observed south of the awning area.

- The southwestern portion of the Property (south portion of 16203) was developed as early as 1928 (apparently residential) at which time the remainder of the Property was vacant. Structures on the north end of 16203 and 16233 appeared to be present between 1938 and 1953; 16223 appeared to remain vacant during this time with the exception of dirt paths traversing it. The main structures at 16223 and 16233 were present by 1972 and the Property appeared to be heavily used for storage by 1981 thorough at least 1994. By 2005, the Property appeared vacant and similar to its current condition.

- The surrounding area appeared largely scrub land and orchards through the 1950s, with some scattered small development areas and gravel pits. By 1964 the surrounding area was starting to be developed for commercial/industrial use and appeared similar to its

current configuration by approximately 1990. In 1939, Arrow Highway was depicted historically as Bonita Avenue.

- Records and documents reviewed indicate that all three parcels appeared to have septic tanks. SCS conducted a Phase II Investigation in September 2013 (SCS, February 2014) in the area of the anticipated septic tank on 16223 (the location of the other septic tanks is unknown) and identified little to no impacts in the area. Assuming that the reported location for the septic tank is correct and that the leach field for this septic system is nearby, no further investigation is warranted for the septic tank at 16223. The presence of septic tanks on the Property remains a REC for 16203 and 16233.

- A 1973 permit indicated installation of two USTs at 16203 (one additional UST was listed on a separate permit for this address but was determined to be off-site based on the associated plans). The UST plans indicate that the Property was once part of a larger facility occupied by Architectural Products Storage that extended well beyond the Property. The USTs were removed and subsequent sampling conducted in 1992. A no further action letter was issued by the LADPW in August 1993. The presence of these former USTs is a historical recognized condition (HREC).

- Numerous tenants have occupied the Property including auto servicing, repairs, and sales; boat building operations; pool servicing company; enameling; precast concrete; garment manufacturing; welding; metal fabrication and metal grinding; and woodworking. A chlorine gas cylinder (one ton) & solution storage tank (500 gallons) associated with pool servicing was located at 16223 and three paint booths and a 1,200-gallon stormwater interceptor were present at 16233. A small oil spill from rain water over flowing from open 5-gallon pails that stored oil was reported for the site. Previous Phase II Investigations by SCS and Converse have included soil and soil vapor sampling across the Property and in areas identified as concerns and have found little to minimum impacts to the Property. Based on the results of the previous investigations, the Property has not been adversely affected as a result of these operations.

- Based on known or likely original construction date for structures on the Property, it is possible that ACMs are present at the 16203 and 16223 parcels. Converse Consultants conducted an asbestos survey of the 16233 Property in 2004 and confirmed asbestos was present in the main building (western side of the parcel) and requires abatement.

- The Property lies above the Baldwin Park OU (Area 2) of the San Gabriel Groundwater Basin Superfund Site. Groundwater in the area has been impacted by VOCs. Because the Property lies above a Superfund site, it is known that groundwater contamination is in the area and the Property has not been identified as a responsible party, therefore no additional impacts are anticipated from this facility.

- Numerous tenants from the Property are identified on the CA WIP are associated with the Well Investigation Program as part of the San Gabriel Valley Superfund site. All are identified as historical and received a no further action status related to the Superfund site. In addition, several tenants are listed on the LACo HMS and HAZNET databases

related to generation and disposal of hazardous materials associated with operations, unless otherwise indicated above, no further information was available.

- Review a previous Phase I ESA for 16233 (Converse, June 2004) indicated there were three associated files at the RWQCB, two were reviewed and the third of which was not available for review and is considered to be a data gap.

- A clandestine laboratory was identified in suite C in 1997. The site was reportedly cleaned up and laboratory waste chemicals were manifested for disposal. Wipe sampling was conducted as part of the investigation conducted by SCS in January 2014 and determined that although residual methamphetamines were detected in Unit C of the structure, detections were well below the cleanup standard. The identification of a clandestine laboratory is an HREC.

In summary, SCS has performed a Phase I Environmental Site Assessment of the property located at 16203 through 16233 Arrow Hwy, Irwindale, California, in conformance with the scope and limitations of 40 CFR 312 and ASTM E1527-13. Any exceptions to, or deletions from, this practice are described in Section 5 of this report.

In the opinion of the Environmental Professional, this assessment has revealed evidence of conditions indicative of historical recognized environmental conditions and recognized environmental conditions in connection with the Property, as discussed above and recommends the following:

- Asbestos abatement (and additional sampling if necessary) should be conducted prior to demolition of the structures on the Property.

- Sampling of the soil stockpile observed at 16203 is recommended to characterize the material and determine its waste characteristics.

- When the locations of the septic tanks are determined during demolition and grading of the Property additional investigation of these areas may be warranted.

- Although the 1,200-gallon clarifier (or stormwater interceptor) was reportedly closed in place and has been investigated, SCS recommends that the removal of the clarifier be conducted under LADPW oversight.

- An attempt to retrieve the analytical laboratory report for soil vapor data collected at 16233 (by Converse) in 2004 should be made. The report should be reviewed to determine if the detection limits were adequate to determine if VOCs are present and/or evaluate any associated health risks. If the laboratory cannot be provided, further evaluation is warranted.

- Review of the RWQCB files should be conducted in attempt to review any missing files or information not included in the previous Converse Phase I ESA's.

17 REFERENCES

California Department of Conservation, Division of Oil, Gas, and Geothermal Resources Website: http://www.conservation.ca.gov/dog/Pages/Index.aspx.

California Department of Health Services, *California Indoor Radon Levels Sorted by Zip Code*, http://www.cdph.ca.gov/healthinfo/environhealth/Documents/Radon/CaliforniaRadonDatabase.pdf. Updated May 4, 2010.

California Environmental Protection Agency, State Water Resources Control Board. GeoTracker website; http://geotracker.waterboards.ca.gov/

City of Irwindale Department of Building and Safety. 16102 Arrow Highway, Irwindale, California 91706.

Converse Consultants, June 1, 2004. *Phase I Environmental Site Assessment (ESA) Report, Arrow Automotive Service, 16233 East Arrow Highway, Irwindale, California.*

Converse Consultants, September 22, 2004. *Phase II Environmental Site Assessment Report, 16233 East Arrow Highway, Irwindale, California*.

Converse Consultants, March 1, 2011. *Draft Phase I Environmental Site Assessment Report, 16203 and 16223 Arrow Highway, Irwindale, California*.

Converse Consultants, May 1, 2013. *Phase I Environmental Site Assessment Report, 16203 and 16223 Arrow Highway, Irwindale, California*.

Department of Toxic Substances Control, Methamphetamine Drug Lab Cleanup Program (http://www.dtsc.ca.gov/sitecleanup/erp/clan_labs.cfm)

Environmental Data Resources, Inc., www.edrnet.com, 1-800-352-0050.

Irwindale Building & Safety Division, 16102 Arrow Highway, Irwindale, California 91706.

Los Angeles Regional Water Quality Control Board, 320 W. 4th St. Suite 200, Los Angeles, CA 90013, (213) 576-6636.

State Water Resources Control Board. (geotracker.waterboards.ca.gov).

SCS Engineers, February 4, 2014. *Phase II Investigation Report, 16203-16223 Arrow Highway, Irwindale, California (APNs 8619-010-907 and 8619-012-905)*

United States Geological Survey, Baldwin Park CA 7.5 Minute Topographic Map, 1966 (Photorevised 1981).

18 GLOSSARY/DEFINITIONS

AAI -- All Appropriate Inquiry
AUL -- Activity and Use Limitations
BTEX -- benzene, toluene, ethylbenzene, and total xylenes
CERCLA -- Comprehensive, Environmental Response, Compensation, and Liability Act
CERCLIS -- Comprehensive Environmental Response, Compensation, and Liability Information System
CFR -- Code of Federal Regulations
CORRACTS -- Corrective Action Against Responsible Parties at a RCRA site
CREC -- A recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (e.g., property use restrictions, AULs, or institutional or engineering controls).
DOGGR -- Department of Oil, Gas, and Geothermal Resources
De Minimus Condition -- A condition that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be *de minimus conditions* are not RECs or CRECs.
DTSC -- California EPA Department of Toxic Substances Control
EDR -- Environmental Data Resources, Inc.
EPA -- Environmental Protection Agency
ERNS -- Emergency Response Notification System
ESA -- Environmental Site Assessment
FINDS -- Facility Index System
HAZNET -- California EPA Hazardous Waste Facility and Manifest Data
HREC -- Historical Recognized Environmental Condition: A past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls
LQG -- Large Quantity Hazardous Waste Generator
LUST -- Leaking Underground Storage Tank
MCL -- Maximum contaminant level
MTBE -- Methyl-tert-butyl-ether
NFA -- No Further Action determination
NFRAP -- No Further Remedial Action Planned
NPL -- National Priority List (Superfund)
PAHs -- Polynuclear aromatic hydrocarbons
PCBs -- Polychlorinated biphenyls
PRGs -- Preliminary Remediation Goals
RCRA -- Resource Conservation and Recovery Act
RCRIS -- Resource Conservation and Recovery Information System

RECs -- R*ecognized environmental conditions* is defined by ASTM E 1527-13 as: "The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. *De minimis conditions* are not *recognized environmental conditions*."

ROD -- Record of Decision

RBSLs -- Risk-based Screening Levels

RWQCB -- Regional Water Quality Control Board

SARA -- Superfund Amendments and Reauthorization Act

SLIC -- Spills, Leaks, Investigations, and Cleanups database

SQG -- Small Quantity Hazardous Waste Generator

SWIS -- Solid Waste Information System

SWLF -- Solid Waste Facility/Landfills

TPH -- Total Petroleum Hydrocarbons

TRIS -- Toxic Release Inventory System

TSD -- Treatment, Storage, and/or Disposal Facility

User -- The person or persons seeking to establish the innocent landowner defense, bona fide prospective purchaser liability protection, and/or contiguous property owner liability protection pursuant to CERCLA sections 101 and 107.

USGS -- United States Geologic Survey

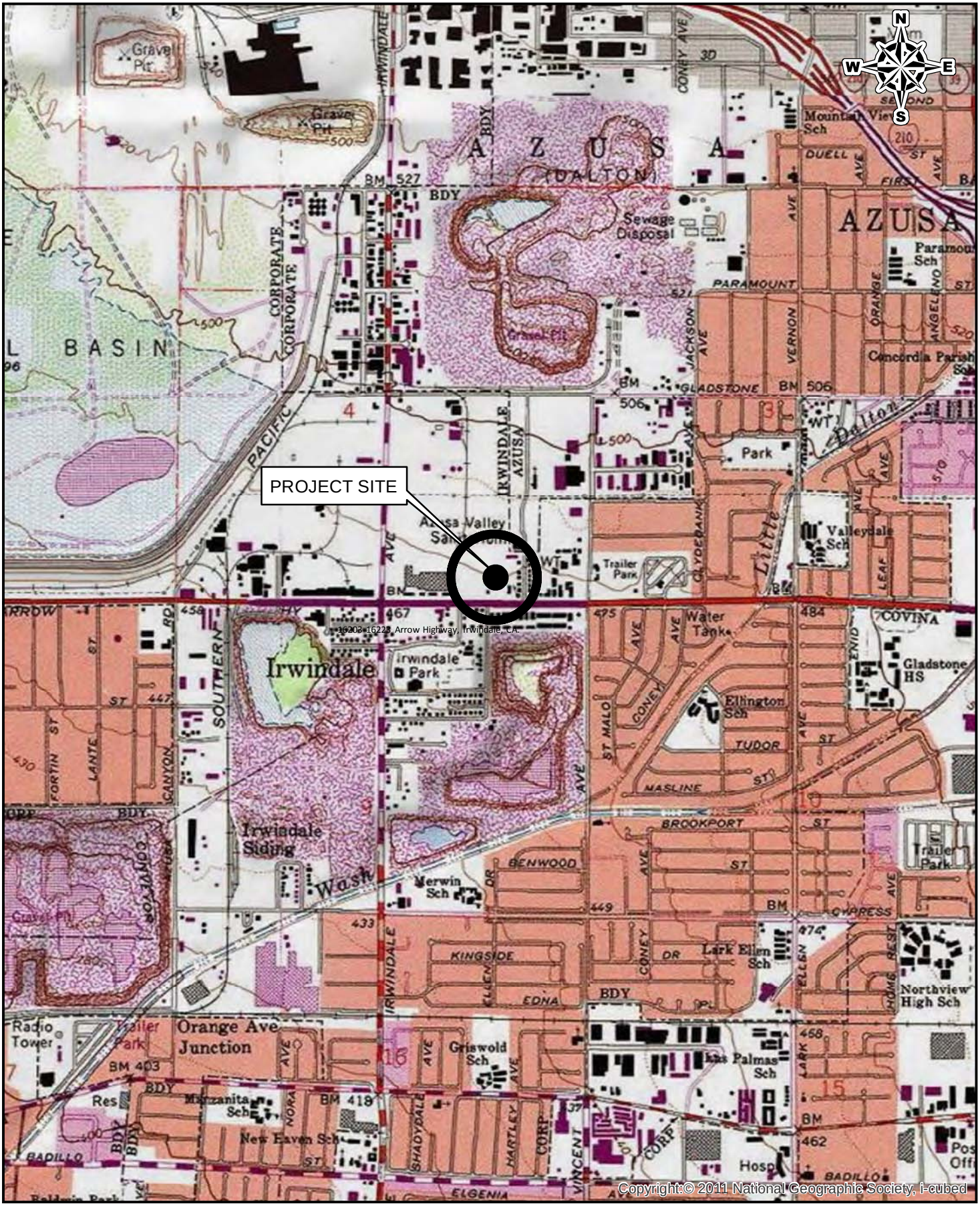
UST -- Underground Storage Tank

VCP -- Voluntary Cleanup Program

VOCs -- Volatile organic compounds

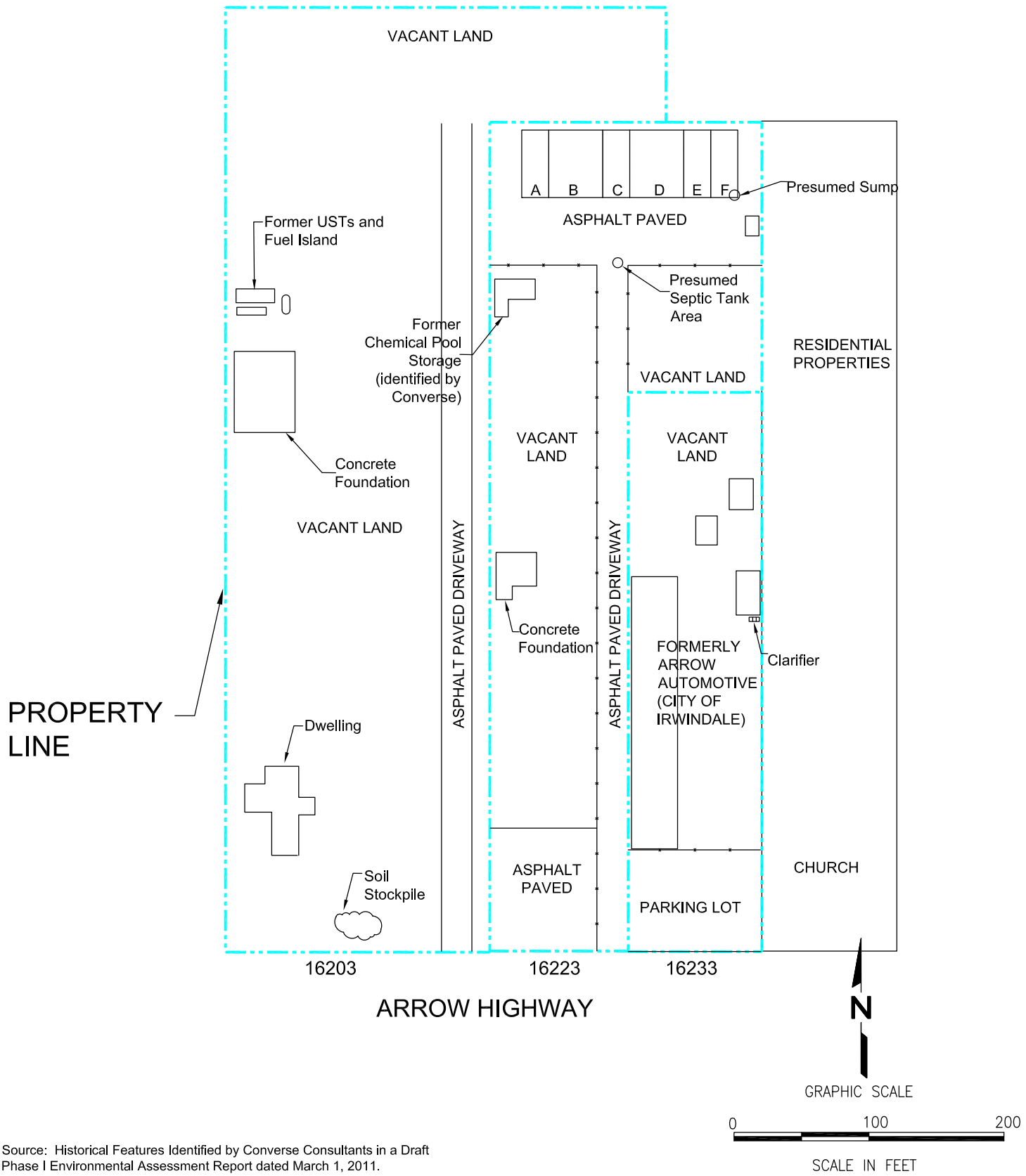
APPENDIX A

FIGURES 1 THROUGH 3



SCS ENGINEERS	SITE:	Job No.: 01213263.01	FIGURE
3900 KILROY AIRPORT WAY, STE 100 LONG BEACH, CALIFORNIA 90806-6816	Irwindale Housing 16203-16223 Arrow Highway Irwindale, CA.	Title: SITE LOCATION MAP	1

Figure 2. Assessor's Parcel Map (APNs 8619-010-907, 8619-012-905, and 8619-012-909)



Source: Historical Features Identified by Converse Consultants in a Draft Phase I Environmental Assessment Report dated March 1, 2011.

SCS ENGINEERS
ENVIRONMENTAL CONSULTANTS
3900 KILROY AIRPORT WAY, SUITE 100
LONG BEACH, CA 90806
PH. (562) 426-9544 FAX. (562) 427-0805

PROJ. NO.	DWN. BY:	ACAD FILE:
01213263.01	A. HUTCHENS	HW/01213263
DSN. BY: A.HUTCHENS	CHK. BY: J.NUNO	APP. BY: J.NUNO

CLIENT:
COMMUNITY DEVELOPMENT
CITY OF IRWINDALE
5050 NORTH IRWINDALE AVENUE
IRWINDALE, CALIFORNIA 91706

SHEET TITLE: SITE PLAN

PROJECT TITLE: 16203-16223 ARROW HIGHWAY
IRWINDALE, CALIFORNIA

DATE: JULY 2014
SCALE: 1" = 100'
FIGURE NO. 3

APPENDIX B

AERIAL IMAGE AND SITE PHOTOGRAPHS

SCS ENGINEERS
ENVIRONMENTAL CONSULTANTS
3900 KILROY AIRPORT WAY, SUITE 100
LONG BEACH, CA 90806
PH. (562) 426-9544 FAX. (562) 427-0805

PROJ. NO.	DWN. BY:	ACAD FILE:
01213263.01	A.HUTCHENS	J/HW/2013
DSN. BY:	CHK. BY: J.NUNO	APP. BY: J.NUNO

CLIENT:
IRWINDALE HOUSING AUTHORITY
5050 NORTH IRWINDALE AVENUE
IRWINDALE, CALIFORNIA 91706

SHEET TITLE:
AERIAL IMAGE AND SITE PHOTOGRAPH LOCATIONS

PROJECT TITLE:
PHASE I ENVIRONMENTAL SITE ASSESSMENT
16203-16233 ARROW HIGHWAY
IRWINDALE, CALIFORNIA 91706

DATE: 6/30/2014
SCALE: NTS
FIGURE NO. APP B

Photo 1. Northerly view of 16203 Arrow Highway (APN 8619-010-907).

Photo 2. Northerly view of 16223 Arrow Highway (APN 8619-012-905).

Photo 3. Northerly view of 16233 Arrow Highway (APN 8610-012-909).

Photo 4. Burnt structure at 16203 Arrow Highway.

Photo 5. Stockpile (source unknown) at south end of 16203 Arrow Highway.

Photo 6. Debris pile observed on northern portion of 16203 Arrow Highway Property.

Photo 7. Southerly view of ashpalt drive and LACDPW manhole at 16203 Arrow Highway.

Photo 8. Southerly view of vacant land at 16223 Arrow Highway.

Photo 9. Northerly view of vacant land and structure at 16223 Arrow Highway.

Photo 10. Vandalism within the structure at 16223 Arrow Highway.

Photo 11. Westerly view south of the structure at 16223 Arrow Highway.

Photo 12. View of vacant structures at 16233 Arrow Highway including service bays and paint booth.

Photo 13. Three stage clarifier at 16233 Arrow Highway.

Photo 14. Southerly view of 16233 Arrow Highway.

APPENDIX C

HISTORICAL SITE USE INFORMATION

Irwindale Housing
16203 - 16233 Arrow Highway
Baldwin Park, CA 91706

Inquiry Number: 3975136.4
June 18, 2014

EDR Historical Topographic Map Report

6 Armstrong Road, 4th Floor
Shelton, Connecticut 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topographic Map Report

Environmental Data Resources, Inc.s (EDR) Historical Topographic Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topographic Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the early 1900s.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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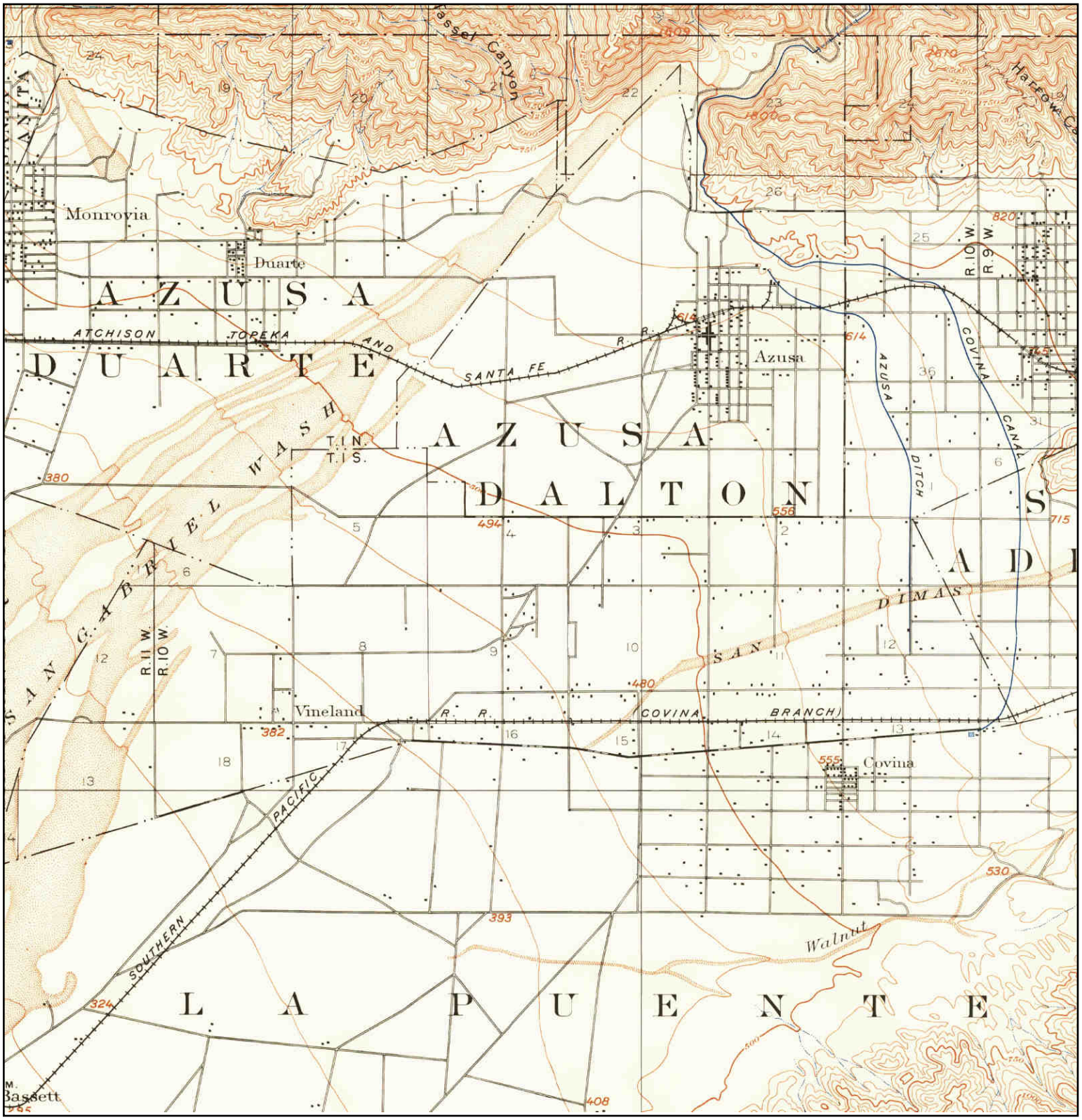
Historical Topographic Map

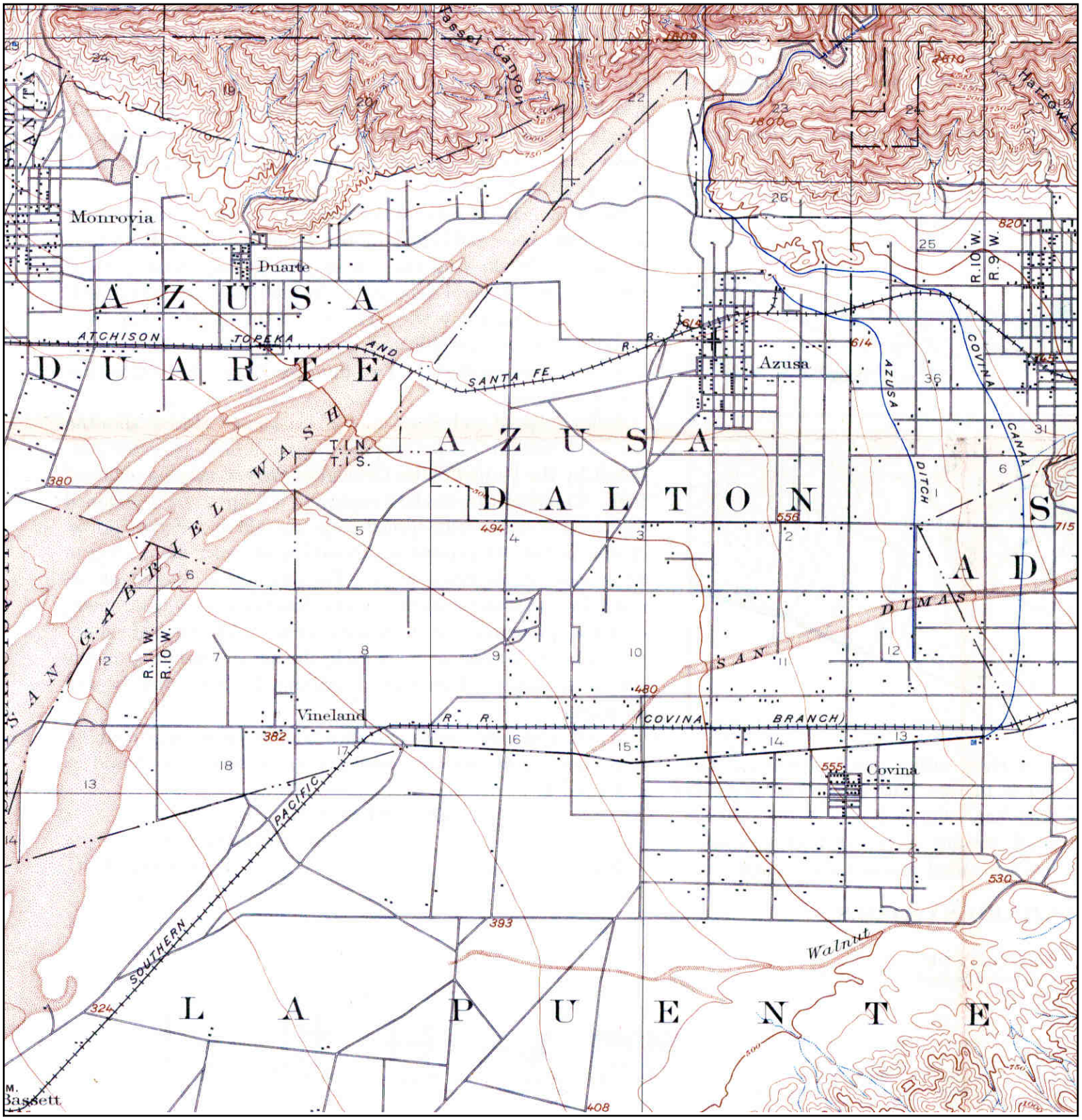


N	TARGET QUAD NAME: POMONA MAP YEAR: 1894 SERIES: 15 SCALE: 1:62500	SITE NAME: Irwindale Housing ADDRESS: 16203 - 16233 Arrow Highway Baldwin Park, CA 91706 LAT/LONG: 34.1081 / -117.9292	CLIENT: SCS Engineers CONTACT: Kim Braun INQUIRY#: 3975136.4 RESEARCH DATE: 06/18/2014

Historical Topographic Map

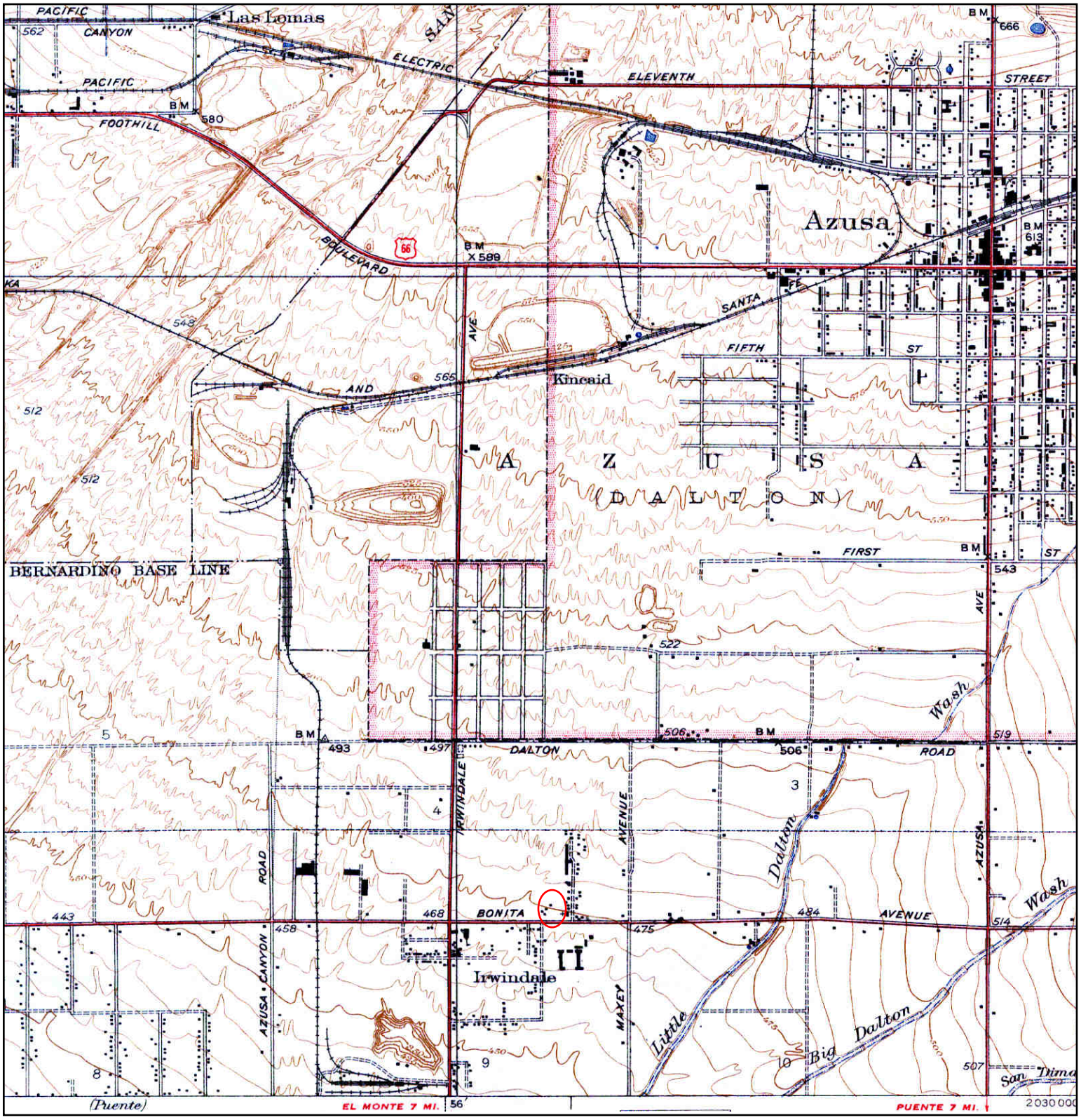
N	TARGET QUAD NAME: SOUTHERN CA SHEET 1 MAP YEAR: 1901 SERIES: 60 SCALE: 1:250000	SITE NAME: Irwindale Housing ADDRESS: 16203 - 16233 Arrow Highway Baldwin Park, CA 91706 LAT/LONG: 34.1081 / -117.9292	CLIENT: SCS Engineers CONTACT: Kim Braun INQUIRY#: 3975136.4 RESEARCH DATE: 06/18/2014

Historical Topographic Map



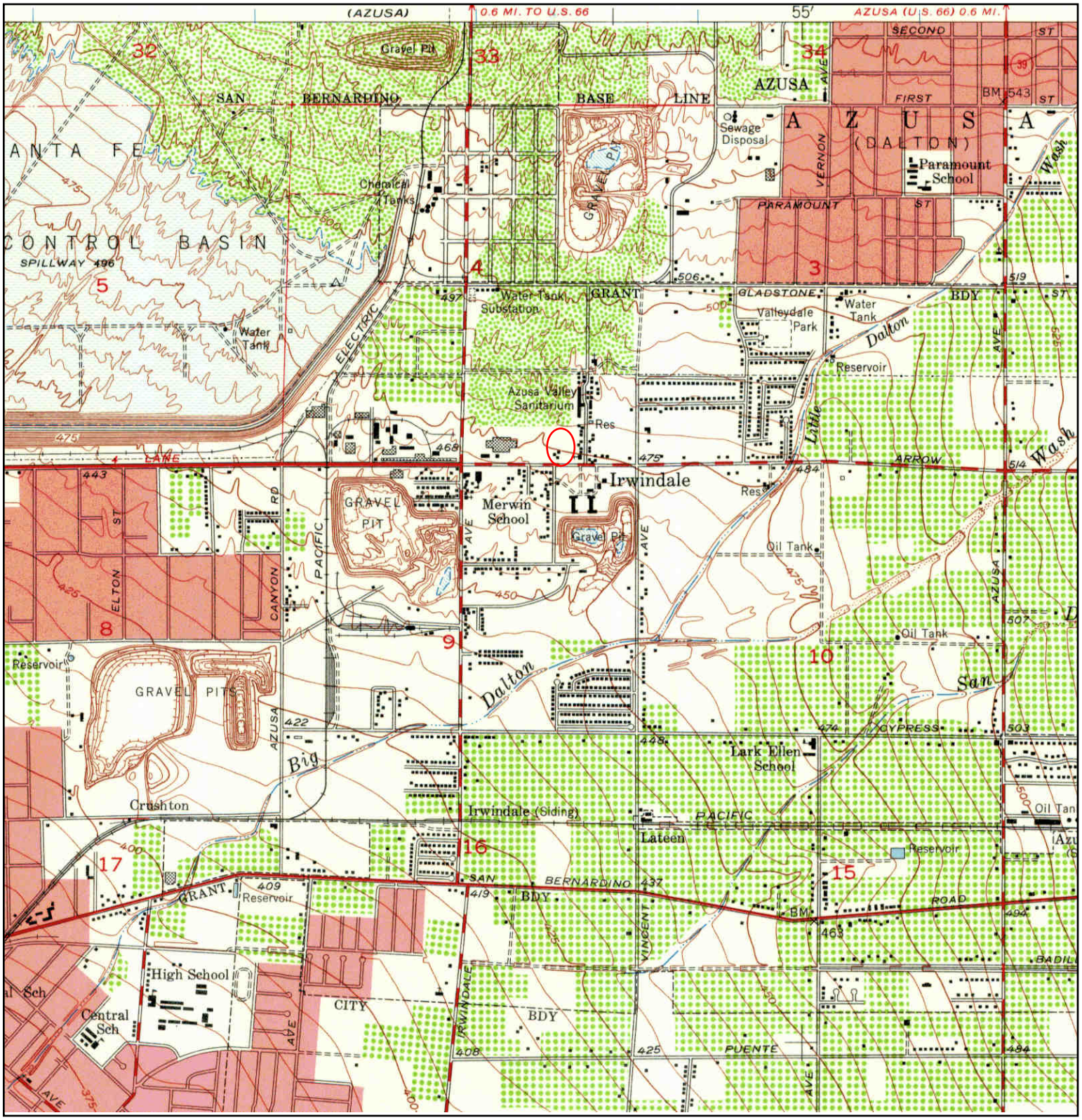
N	TARGET QUAD NAME: POMONA MAP YEAR: 1904 SERIES: 15 SCALE: 1:62500	SITE NAME: Irwindale Housing ADDRESS: 16203 - 16233 Arrow Highway Baldwin Park, CA 91706 LAT/LONG: 34.1081 / -117.9292	CLIENT: SCS Engineers CONTACT: Kim Braun INQUIRY#: 3975136.4 RESEARCH DATE: 06/18/2014

Historical Topographic Map



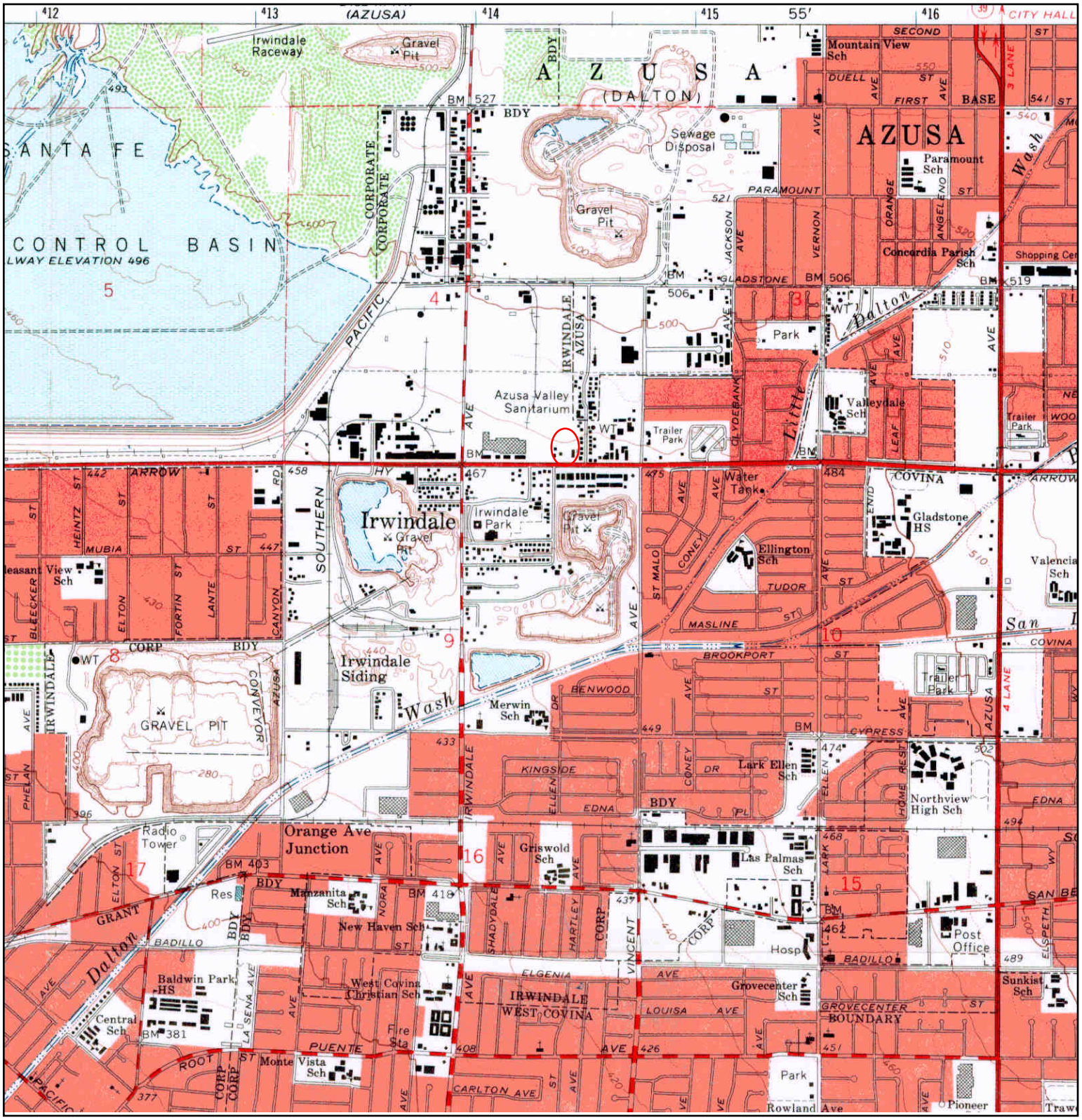
N	TARGET QUAD NAME: AZUSA MAP YEAR: 1939 SERIES: 6 SCALE: 1:24000	SITE NAME: Irwindale Housing ADDRESS: 16203 - 16233 Arrow Highway Baldwin Park, CA 91706 LAT/LONG: 34.1081 / -117.9292	CLIENT: SCS Engineers CONTACT: Kim Braun INQUIRY#: 3975136.4 RESEARCH DATE: 06/18/2014

Historical Topographic Map



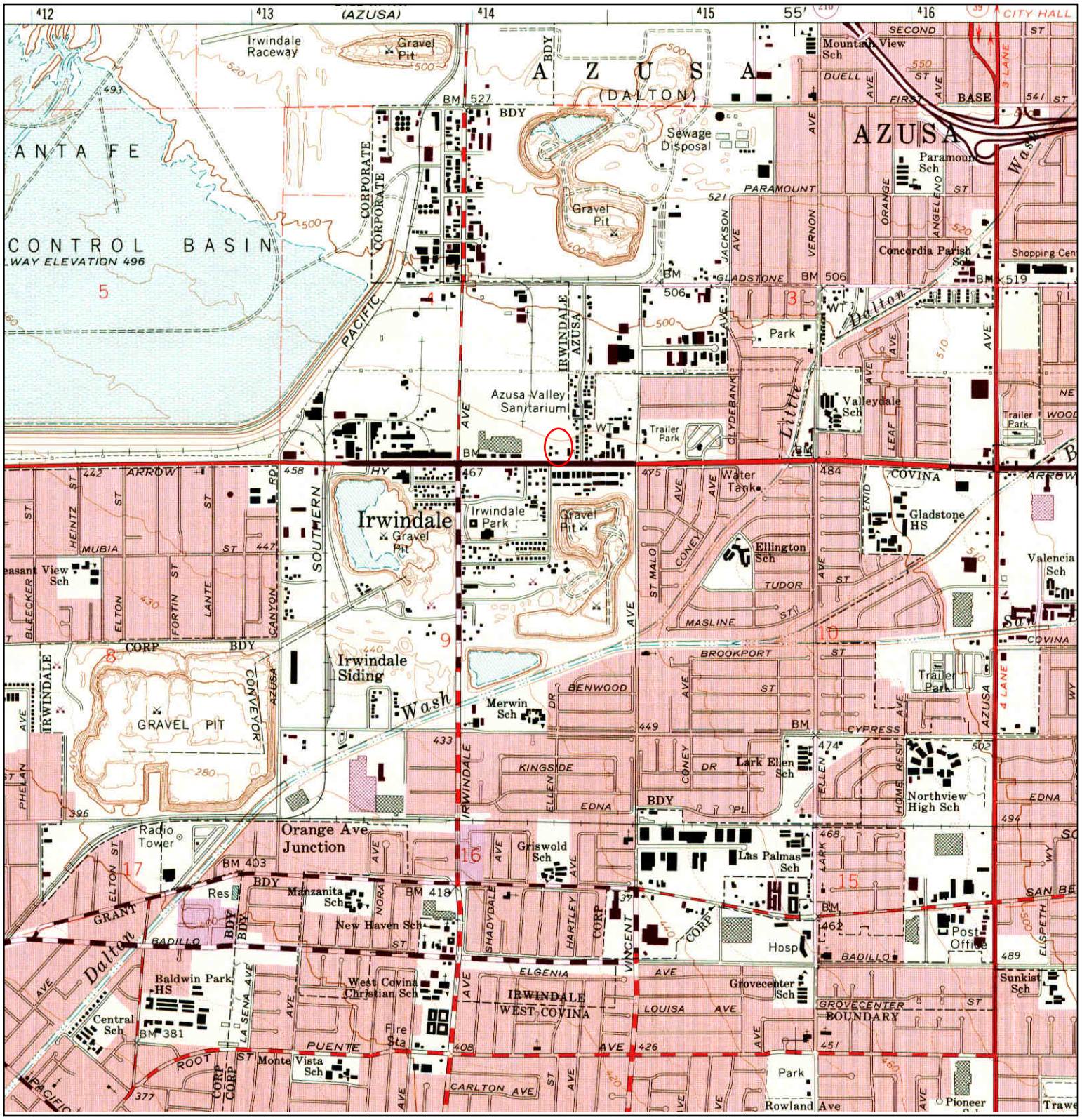
N	**TARGET QUAD** NAME: BALDWIN PARK MAP YEAR: 1953 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Irwindale Housing ADDRESS: 16203 - 16233 Arrow Highway Baldwin Park, CA 91706 LAT/LONG: 34.1081 / -117.9292	CLIENT: SCS Engineers CONTACT: Kim Braun INQUIRY#: 3975136.4 RESEARCH DATE: 06/18/2014

Historical Topographic Map



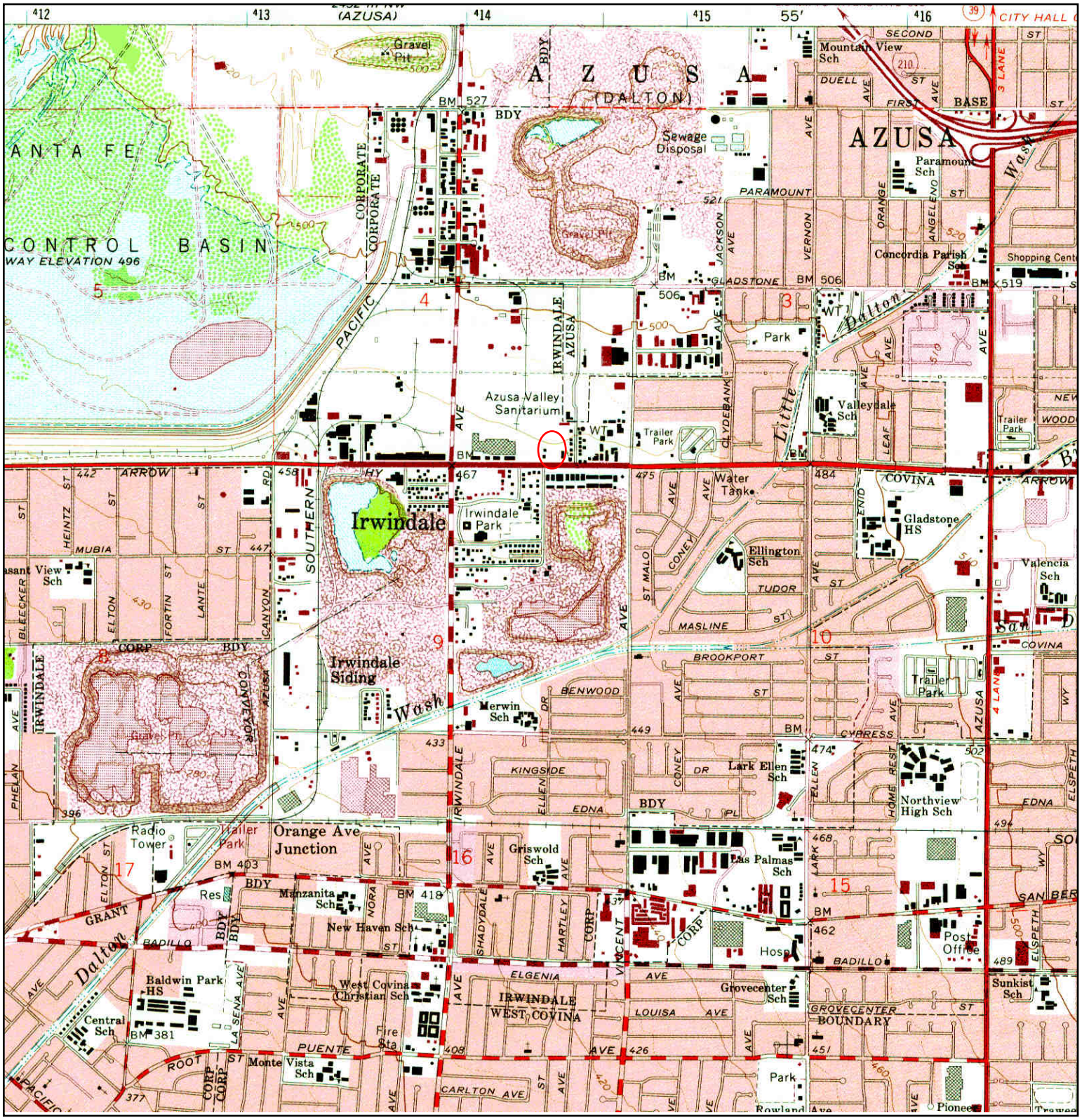
N	TARGET QUAD NAME: BALDWIN PARK MAP YEAR: 1966 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Irwindale Housing ADDRESS: 16203 - 16233 Arrow Highway Baldwin Park, CA 91706 LAT/LONG: 34.1081 / -117.9292	CLIENT: SCS Engineers CONTACT: Kim Braun INQUIRY#: 3975136.4 RESEARCH DATE: 06/18/2014

Historical Topographic Map



N	TARGET QUAD NAME: BALDWIN PARK MAP YEAR: 1972 PHOTOREVISED FROM :1966 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Irwindale Housing ADDRESS: 16203 - 16233 Arrow Highway Baldwin Park, CA 91706 LAT/LONG: 34.1081 / -117.9292	CLIENT: SCS Engineers CONTACT: Kim Braun INQUIRY#: 3975136.4 RESEARCH DATE: 06/18/2014

Historical Topographic Map



N	TARGET QUAD NAME: BALDWIN PARK MAP YEAR: 1981 PHOTOREVISED FROM :1966 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Irwindale Housing ADDRESS: 16203 - 16233 Arrow Highway Baldwin Park, CA 91706 LAT/LONG: 34.1081 / -117.9292	CLIENT: SCS Engineers CONTACT: Kim Braun INQUIRY#: 3975136.4 RESEARCH DATE: 06/18/2014

Historical Topographic Map

N	ADJOINING QUAD NAME: PUENTE MAP YEAR: 1927 SERIES: 6 SCALE: 1:24000	SITE NAME: Irwindale Housing ADDRESS: 16203 - 16233 Arrow Highway Baldwin Park, CA 91706 LAT/LONG: 34.1081 / -117.9292	CLIENT: SCS Engineers CONTACT: Kim Braun INQUIRY#: 3975136.4 RESEARCH DATE: 06/18/2014

Irwindale Housing
16203 - 16233 Arrow Highway
Baldwin Park, CA 91706

Inquiry Number: 3975136.9
June 19, 2014

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th Floor
Shelton, Connecticut 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

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Please contact EDR at 1-800-352-0050
with any questions or comments.

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Date EDR Searched Historical Sources:

Aerial Photography June 19, 2014

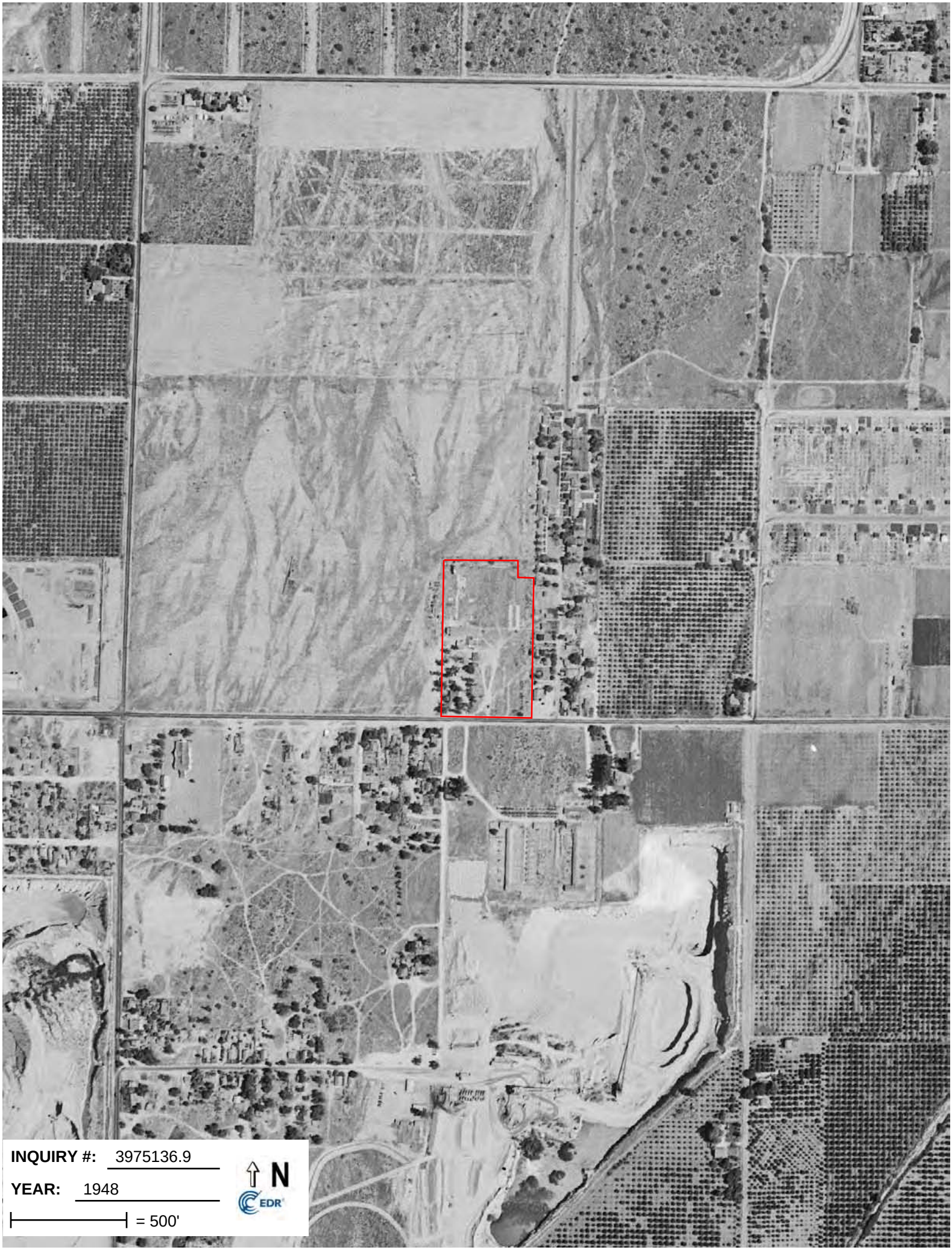
Target Property:

16203 - 16233 Arrow Highway
Baldwin Park, CA 91706

Year	***Scale***	***Details***	***Source***
1928	Aerial Photograph. Scale: 1"=500'	Flight Year: 1928	EDR
1938	Aerial Photograph. Scale: 1"=500'	Flight Year: 1938	EDR
1948	Aerial Photograph. Scale: 1"=500'	Flight Year: 1948	EDR
1953	Aerial Photograph. Scale: 1"=500'	Flight Year: 1953	EDR
1964	Aerial Photograph. Scale: 1"=500'	Flight Year: 1964	EDR
1972	Aerial Photograph. Scale: 1"=500'	Flight Year: 1972	EDR
1981	Aerial Photograph. Scale: 1"=500'	Flight Year: 1981	AMI
1990	Aerial Photograph. Scale: 1"=500'	Flight Year: 1990	USGS
1994	Aerial Photograph. Scale: 1"=500'	/DOQQ - acquisition dates: 1994	EDR
2005	Aerial Photograph. Scale: 1"=500'	Flight Year: 2005	EDR
2009	Aerial Photograph. Scale: 1"=500'	Flight Year: 2009	EDR
2010	Aerial Photograph. Scale: 1"=500'	Flight Year: 2010	EDR
2012	Aerial Photograph. Scale: 1"=500'	Flight Year: 2012	EDR

INQUIRY #: 3975136.9
YEAR: 1928
= 500'
N
EDR

INQUIRY #: 3975136.9
YEAR: 1938
= 500'
N
EDR

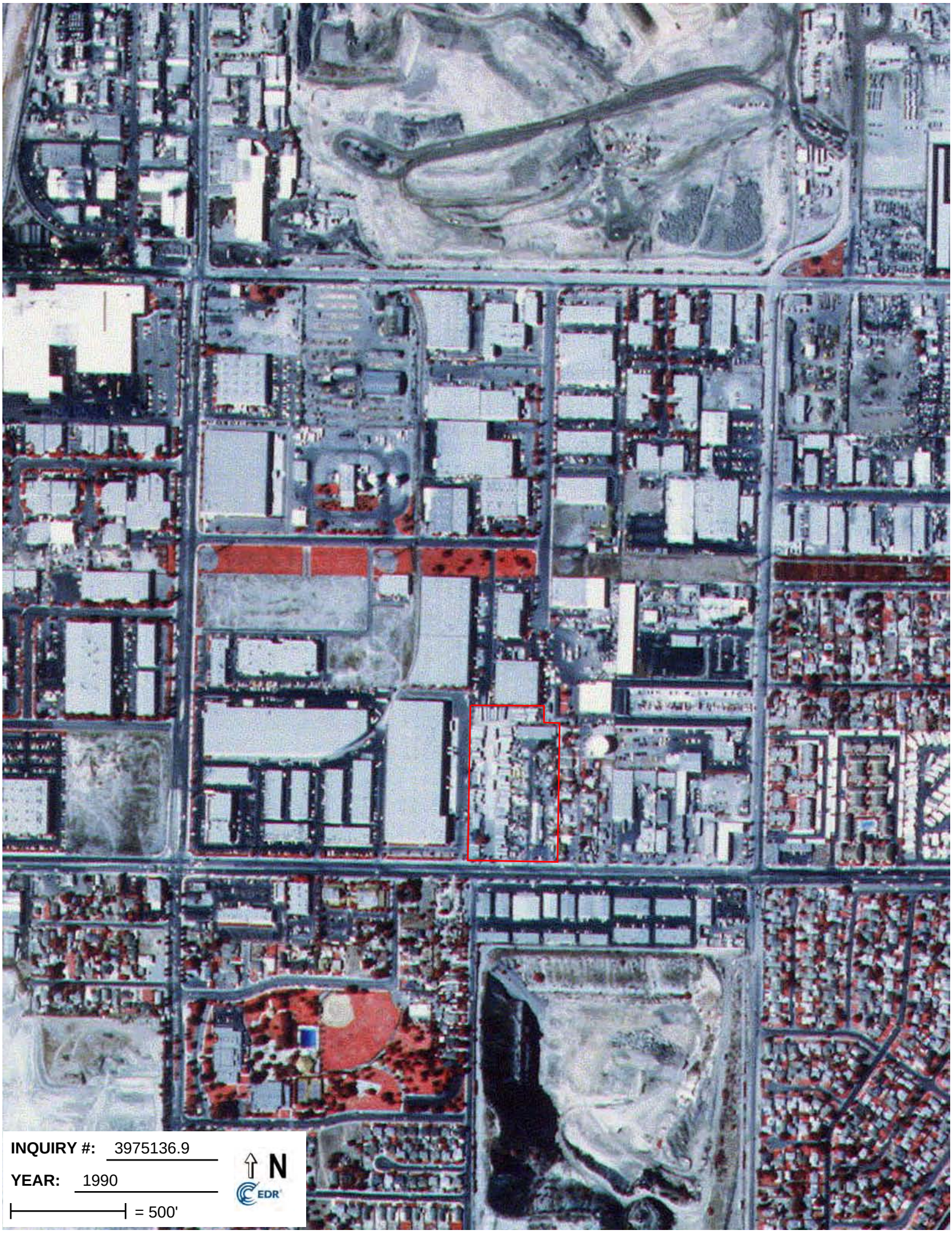

INQUIRY #: 3975136.9
YEAR: 1948
= 500'
N
EDR

INQUIRY #: 3975136.9
YEAR: 1953
= 500'
N
EDR

INQUIRY #: 3975136.9
YEAR: 1964
= 500'
N
EDR

INQUIRY #: 3975136.9
YEAR: 1972
= 500'
N
EDR

INQUIRY #: 3975136.9
YEAR: 1981
= 500'
N
EDR


INQUIRY #: 3975136.9
YEAR: 1990
= 500'
N
EDR

INQUIRY #: 3975136.9
YEAR: 1994
= 500'
N
EDR

INQUIRY #: 3975136.9
YEAR: 2005
= 500'
N
EDR

INQUIRY #: 3975136.9
YEAR: 2009
= 500'
N
EDR

INQUIRY #: 3975136.9
YEAR: 2010
= 500'
N
EDR

INQUIRY #: 3975136.9
YEAR: 2012
= 500'
N
EDR

CITY OF IRWINDALE

1

803 8-64 **APPLICATION FOR BUILDING PERMIT**

COUNTY OF LOS ANGELES
DEPARTMENT OF COUNTY ENGINEER
BUILDING AND SAFETY DIVISION
JOHN A. LAMBIE, COUNTY ENGINEER
COLEMAN W. JENKINS, SUP'T OF BUILDING

BUILDING ADDRESS: 16203 E ARROW HWY
LOCALITY: Irwindale
NEAREST CROSS ST.: Irwindale
DISTRICT NO.: 5.06 | GROUP OR TYPE CONST.: Vacant Tank | PROCESSED BY: COSTER
STATISTICAL CLASSIFICATION: CLASS NO. 20 DWELL UNITS —
SEWER MAP: BK PG
USE ZONE: M-2 | MAP NO.: 2353 | SPECIAL CONDITIONS:

BLDG. SETBACK FROM FRONT PROP. LINE OF _____ (STREET)

TYPE OF HIGHWAY	EXISTING WIDTH	SETBACK FROM C.L.	HIGHWAY +	YARD =	TOTAL
			+	=	

BLDG. SETBACK FROM SIDE PROP. LINE OF _____ (STREET)

TYPE OF HIGHWAY	EXISTING WIDTH	SETBACK FROM C.L.	HIGHWAY +	YARD =	TOTAL
			+	=	

CORNER CUTOFF YES ☐ NO ☐

SEE REVERSE SIDE FOR SPECIAL APPROVALS

FOR APPLICANT TO FILL IN

BUILDING ADDRESS: 16203 ARROW HWY
LOT NO. | BLOCK
TRACT: Legal in file
SIZE OF LOT | NO. OF BLDGS. NOW ON LOT
USE OF EXISTING BLDG.
OWNER: WESTERN PRECAST TEL. NO. 969-2114
ADDRESS: 16203 ARROW HWY
CITY: IRWINDALE
ARCHITECT OR ENGINEER | TEL. NO.
ADDRESS
CONTRACTOR: J.D. BRODINE TEL. NO. 686-0008
ADDRESS: 4290 NELTON LIC NO. 278027
CITY: BALDWELL PARK LIC CLASS C-12

DESCRIPTION OF WORK

NEW ✓ ADD ALTER REPAIR DEMOLISH
SQ. FT. SIZE | NO. OF STORIES | NO. OF FAMILIES
USE OF STRUCTURE
INSTALLATION of 1 underground tank
SIGNATURE OF APPLICANT
VALUATION $ $1100.00

P.C. FEE $ | PMT. FEE $ 24.00

I HEREBY ACKNOWLEDGE THAT I HAVE READ THIS APPLICATION AND STATE THAT THE ABOVE IS CORRECT AND AGREE TO COMPLY WITH ALL COUNTY ORDINANCES AND STATE LAWS REGULATING BUILDING CONSTRUCTION. I CERTIFY THAT IN DOING THE WORK AUTHORIZED HEREBY I WILL NOT EMPLOY ANY PERSON IN VIOLATION OF THE LABOR CODE OF THE STATE OF CALIFORNIA RELATING TO WORKMEN'S COMPENSATION INSURANCE.

SIGNATURE OF PERMITTEE: Patrick Rogers
ADDRESS

APPROVALS	DATE	INSPECTOR'S SIGNATURE
FOUNDATION, LOCATION FORMS, MATERIALS		
FRAME, FIRE STOPS, BRACING BOLTS		
FURNACE: LOCATION GAS VENT. DUCTS		
LATH. INT.		
LATH. EXT.	8-24-73	Coster
HOUSE NUMBER CORRECT AND POSTED		
FINAL		

JOHN F. LEWIS, PRINCIPAL STRUCTURAL ENGINEER

PLAN CHECK VALIDATION CK. M.O. CASH —

PERMIT VALIDATION CK. M.O CASH

LACo 63928 JUN 13 1 24.00

INSPECTOR COPY

CITY OF IRWINDALE

1

J03 8-64 APPLICATION FOR BUILDING PERMIT

COUNTY OF LOS ANGELES
DEPARTMENT OF COUNTY ENGINEER
BUILDING AND SAFETY DIVISION
JOHN A. LAMBIE, COUNTY ENGINEER
COLEMAN W. JENKINS, SUP'T OF BUILDING

BUILDING ADDRESS: 16203 E. ARROW HWY
LOCALITY: Irwindale
NEAREST CROSS ST.: Irwindale

DISTRICT NO.: 5.06 | GROUP: [illegible] | TYPE CONST.: | PROCESSED BY: COSTER

STATISTICAL CLASSIFICATION: CLASS NO. 20 DWELL UNITS —
SEWER MAP: BK PG

USE ZONE: M-2 | MAP NO.: 2352 | SPECIAL CONDITIONS:

BLDG. SETBACK FROM FRONT PROP. LINE OF _____ (STREET)

TYPE OF HIGHWAY	EXISTING WIDTH	SETBACK FROM C.L.	HIGHWAY +	YARD =	TOTAL
			+	=	

BLDG. SETBACK FROM SIDE PROP. LINE OF _____ (STREET)

TYPE OF HIGHWAY	EXISTING WIDTH	SETBACK FROM C.L.	HIGHWAY +	YARD =	TOTAL
			+	=	

CORNER CUTOFF YES ☐ NO ☐

SEE REVERSE SIDE FOR SPECIAL APPROVALS

FOR APPLICANT TO FILL IN

BUILDING ADDRESS: 16203 ARROW HWY
LOT NO. | BLOCK
TRACT: Legal in file
SIZE OF LOT | NO. OF BLDGS. NOW ON LOT: 2
USE OF EXISTING BLDG.
OWNER: WESTERN PRECAST | TEL. NO.: 969-2114
ADDRESS: 16203 ARROW HWY
CITY: IRWINDALE
ARCHITECT OR ENGINEER | TEL. NO.
ADDRESS
CONTRACTOR: J.D. BRODINE | TEL. NO: 686 0008
ADDRESS: 4290 N. ELTON | LIC NO: 278027
CITY: BALDWIN PARK | LIC CLASS: C-12

DESCRIPTION OF WORK

NEW ✓ ADD ALTER REPAIR DEMOLISH
SQ. FT. SIZE | NO. OF STORIES | NO. OF FAMILIES
USE OF STRUCTURE
INSTALLATION OF 2 underground tank
SIGNATURE OF APPLICANT
VALUATION $ 2200.00

P.C. FEE $ | PMT. FEE $ 33.00

I HEREBY ACKNOWLEDGE THAT I HAVE READ THIS APPLICATION AND STATE THAT THE ABOVE IS CORRECT AND AGREE TO COMPLY WITH ALL COUNTY ORDINANCES AND STATE LAWS REGULATING BUILDING CONSTRUCTION. I CERTIFY THAT IN DOING THE WORK AUTHORIZED HEREBY I WILL NOT EMPLOY ANY PERSON IN VIOLATION OF THE LABOR CODE OF THE STATE OF CALIFORNIA RELATING TO WORKMEN'S COMPENSATION INSURANCE.

SIGNATURE OF PERMITTEE: Robert Pizzuto
ADDRESS

APPROVALS	DATE	INSPECTOR'S SIGNATURE
FOUNDATION, LOCATION FORMS, MATERIALS		
FRAME, FIRE STOPS, BRACING BOLTS		
FURNACE: LOCATION GAS VENT. DUCTS		
LATH. INT.		
LATH. EXT.		
HOUSE NUMBER CORRECT AND POSTED	8-24-73	Coster
FINAL		

JOHN F. LEWIS, PRINCIPAL STRUCTURAL ENGINEER

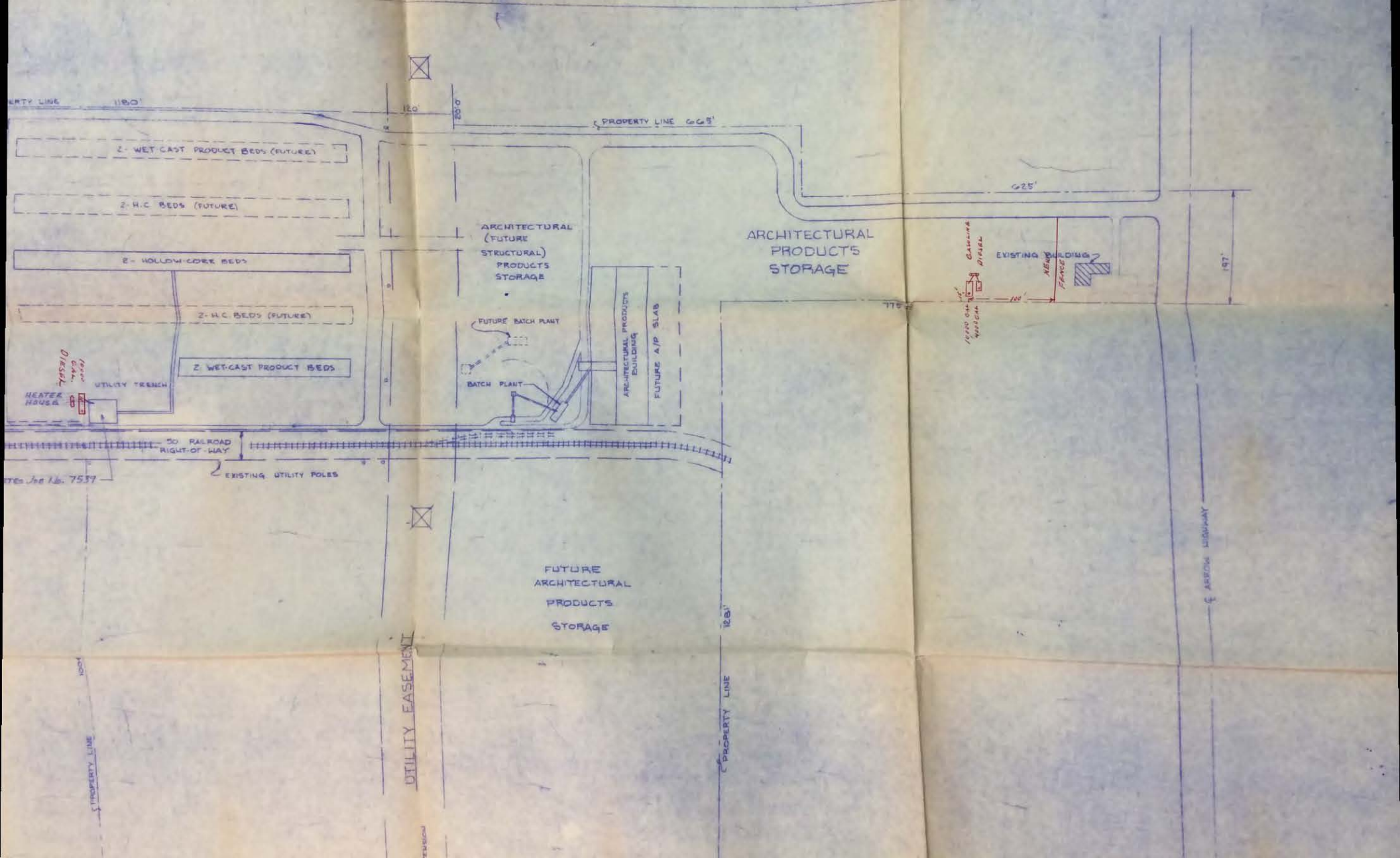
PLAN CHECK VALIDATION CK. M.O. CASH —

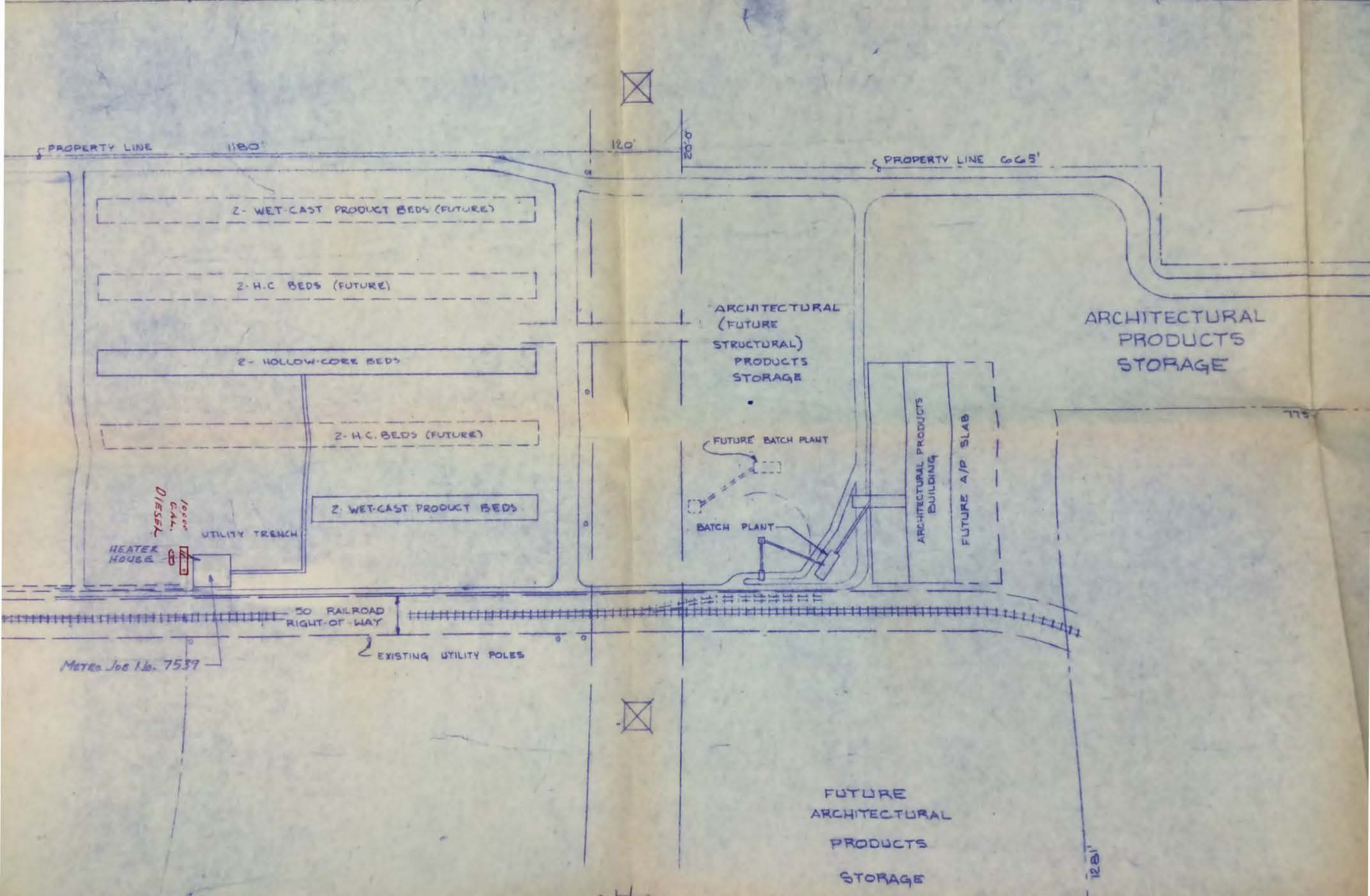
PERMIT VALIDATION CK. M.O CASH

LACo 63918 JUN 13 1 33.00

INSPECTOR COPY

OPERTY LINE 665'
625'
ARCHITECTURAL
PRODUCTS
STORAGE
GASOLINE
DIESEL
EXISTING BUILDING
NEW
FENCE
197'
15'
100'
775
10,000 GAL
4000 GAL
ARCHITECTURAL PRODUCTS
BUILDING
FUTURE A/P SLAB
GHWAY


PROPERTY LINE 1180'
120'
200'
PROPERTY LINE 665'
625'
2- WET CAST PRODUCT BEDS (FUTURE)
2- H.C BEDS (FUTURE)
2- HOLLOW-CORE BEDS
2- H.C. BEDS (FUTURE)
2- WET-CAST PRODUCT BEDS
ARCHITECTURAL (FUTURE STRUCTURAL) PRODUCTS STORAGE
FUTURE BATCH PLANT
BATCH PLANT
ARCHITECTURAL PRODUCTS BUILDING
FUTURE A/P SLAB
ARCHITECTURAL PRODUCTS STORAGE
EXISTING BUILDING
NEW FENCE
GASOLINE
DIESEL
100'
775'
197'
DIESEL
GAS.
UTILITY TRENCH
HEATER HOUSE
50' RAILROAD RIGHT-OF-WAY
EXISTING UTILITY POLES
FUTURE ARCHITECTURAL PRODUCTS STORAGE
UTILITY EASEMENT
128'
PROPERTY LINE
PROPERTY LINE
ARROW HIGHWAY


PROPERTY LINE
1180'
120'
20'-0"
PROPERTY LINE 665'
2- WET-CAST PRODUCT BEDS (FUTURE)
2-H.C BEDS (FUTURE)
2- HOLLOW-CORE BEDS
2-H.C. BEDS (FUTURE)
2 WET-CAST PRODUCT BEDS
ARCHITECTURAL (FUTURE STRUCTURAL) PRODUCTS STORAGE
ARCHITECTURAL PRODUCTS STORAGE
FUTURE BATCH PLANT
BATCH PLANT
ARCHITECTURAL PRODUCTS BUILDING
FUTURE A/P SLAB
775'
10,000 GAL. DIESEL
UTILITY TRENCH
HEATER HOUSE
50 RAILROAD RIGHT-OF-WAY
EXISTING UTILITY POLES
Metro Job No. 7539
FUTURE ARCHITECTURAL PRODUCTS STORAGE
1281'

CITY OF IRWINDALE

APPLICATION FOR BUILDING PERMIT

COUNTY OF LOS ANGELES — **BUILDING AND SAFETY**

1

WORKERS' COMPENSATION DECLARATION

I hereby affirm that I have a certificate of consent to self insure, or a certificate of Workers' Compenstion Insurance, or a certified copy thereof (Sec. 3800, Lab. C.)

Policy No._____ Company_____

☐ Certified copy is hereby furnished.

☐ Certified copy is filed with the county building inspection department.

Date_____ Applicant_____

CERTIFICATE OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE

(This section need not be completed if the permit is for one hundred dollars ($100) or less.)

I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Workers' Compensation Laws.

Date_____ Applicant_____

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Workers' Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

LICENSED CONTRACTORS DECLARATION

I hereby affirm that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code, and my license is in full force and effect.

License Number_____ Lic. Class_____

Contractor_____ Date_____

☐ I am exempt from the licensing requirements as I am a licensed architect or a registered professional engineer acting in my professional capacity (Section 7051, Business and Professions Code).

Lic. or Reg. No._____ Date_____

OWNER-BUILDER DECLARATION

I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Section 7031.5, Business and Professions Code):

☐ I, as owner of the property, or my employees with wages as their sole compensation, will do the work and the structure is not intended or offered for sale (Section 7044, Business and Professions Code).

☒ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Section 7044, Business and Professions Code).

CONSTRUCTION LENDING AGENCY

I hereby affirm that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C.).

Lender's Name_____

Lender's Address_____

I certify that I have read this application and state that the above information is correct. I agree to comply with all County ordinances and State laws relating to building construction, and hereby authorize representatives of this County to enter upon the above-mentioned property for inspection purposes.

Signature of Applicant or Agent: [signature] Date: 2-18-83

76 A638A CE803A (REV. 1/80)

FOR APPLICANT TO FILL IN

BUILDING ADDRESS: 16223 ARROW HY - LOT #8

CITY: IRWINDALE ZIP: 91706

SIZE OF LOT: 76X51 NO. OF BLDGS. NOW ON LOT: NONE

TRACT | BLOCK | LOT NO.

OWNER: JOE DI SHANLI TEL NO. 334-7801

ADDRESS: 16223 ARROW HY

CITY: IRWINDALE ZIP: 91706

ARCHITECT OR ENGINEER | TEL. NO.

ADDRESS

CONTRACTOR: SELF TEL. NO.

ADDRESS | LIC. NO.

CITY | LIC. CLASS

SQ. FT. SIZE | NO. OF STORIES | NO. OF FAMILIES | CHECK ONE

DESCRIPTION OF WORK: CHLORINE & SOLUTION STORAGE TANK

NEW ☒ ADD ☐ ALTER ☐ REPAIR ☐ DEMOL ☐

USE OF EXISTING BLDG.

APPLICANT (PRINT): KEN MAYFIELD TEL NO. 967-8989

ADDRESS: 117 S. HOLLENBECK COVINA 91722

PRESENT BUILDING ADDRESS

LOCALITY

MOVING CONTRACTOR | TEL. NO.

ADDRESS

REQUIRED SET BACK	YARD	HWY	TOTAL SETBACK FROM PROP. LINE	EXIST. WIDTH
FRONT P.L.				
SIDE P.L.				

P.C. Fee $ 20.00		Permit Fee	16.00
		Issuance Fee	8.50
Investigation Fee		Total Fee	24.50

BUILDING ADDRESS: 16223 E. ARROW HWY

LOCALITY: Irwindale

NEAREST CROSS ST.: Irwindale Avenue

ASSESSOR MAP BOOK | PAGE | PARCEL

USE ZONE: M2 MAP NO. 2353

SPECIAL CONDITIONS

DISTRICT	GROUP	TYPE CONST.	FIRE ZONE	PROCESSED BY
5.06		Chlorine Tanks	III	[signature]

STATISTICAL CLASSIFICATION: CLASS NO. 20 DWELL. UNITS_____ APT. CONDO

SEWER MAP: BK. PG.

VALIDATION

VALUATION $ 200

$

FINAL DATE 3-21-83

FINAL By [signature]

#3177A
#3177.1A
#.....23
1..20.00
...20.00 ck
02 17-83

INSPECTOR COPY

Business License 9905

Expiration Date 6-30-83

SEE REVERSE FOR EXPLANATORY LANGUAGE

ARGUS POOL SERVICE
KENN MAYFIELD IRWINDALE
213 967-8984
16223 ARROW HWY. LOT - 8

BAROMETRIC LEG

41 FT FROM GROUND

39 FT ABOVE WATER LEVEL

1/2" SCH. 80 SEAMLESS IRON PIPE GOING UP.

1/2" SCH. 80 PVC GOING DOWN

1/2" SCH. 80 SEAMLESS IRON PIPE GOING UP.

1" SCH. 80 PVC GOING DOWN

1 1/2" GALVANIZED PIPE FOR STANDARD WITH GUY WIRE SUPPORT LINES

1. Provide 1 APPROVED SELF CONTAINED BREATHING APPARATUS.
2. Provide EMER SHOWER + EYE WASH + WASH DOWN HOSE.
3. Provide NFPA 704 M LABEL FOR CHLORINE.
4. Provide EMER. TELEPHONE NO. POSTED ON GATE.

BUILDING DEPT.
FILE COPY

COUNTY OF LOS ANGELES
FIRE DEPARTMENT
FIRE PREVENTION BUREAU
APPROVED
By B. Rogers Date 1-27-83
FIRE PREVENTION ENGINEER
☐ Subject to field inspection approval
☑ Subject to corrections on plans
☐ Subject to compliance with correction sheet requirements

EDUCTOR VALVE

SOLUTION TANK

72"

FOR BLOW DOWN LINE TO HOLDING TANK

36" DIA
7' LONG

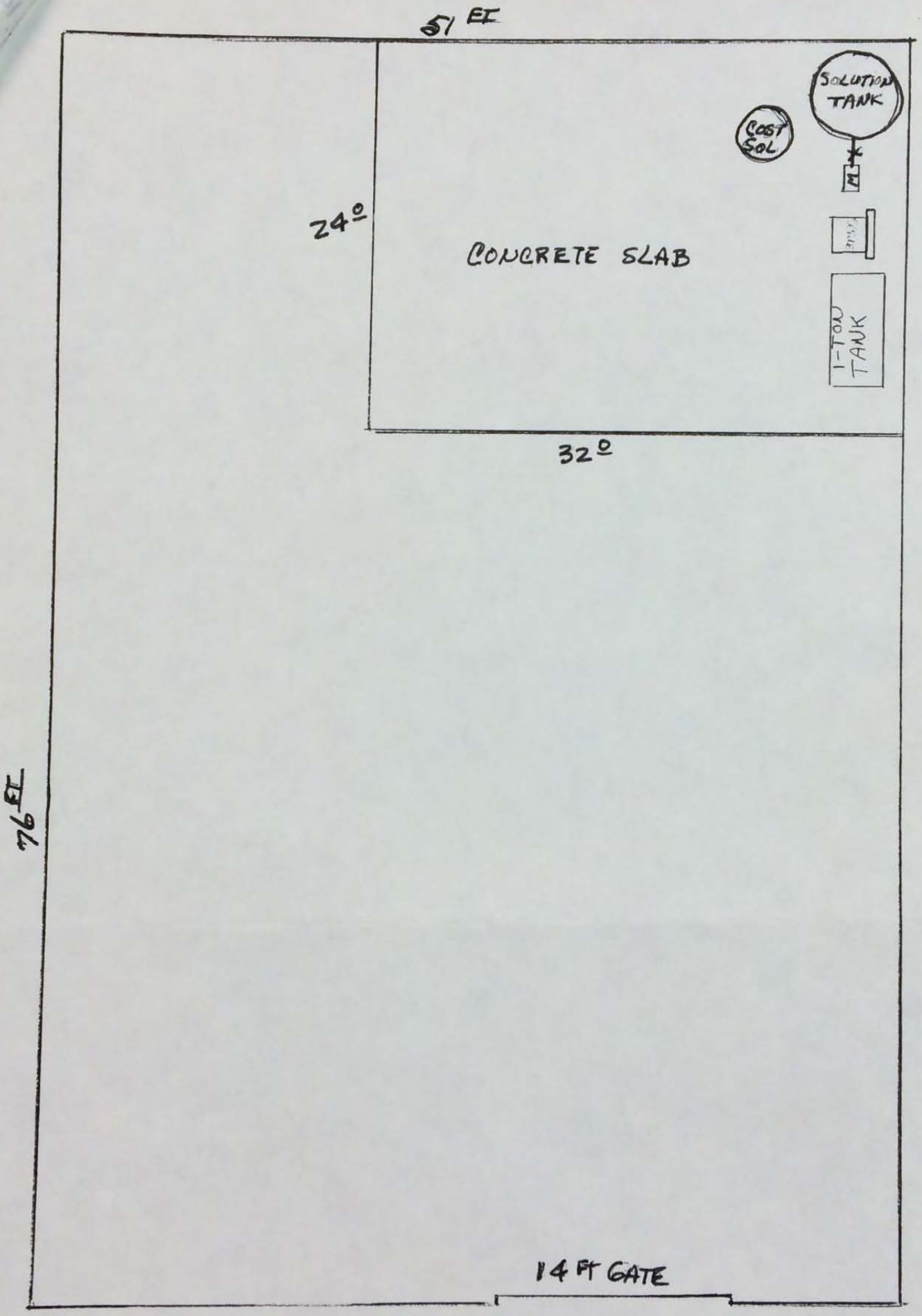
CHLORINE STORAGE TANK

SCALE

COSTIC SOLUTION

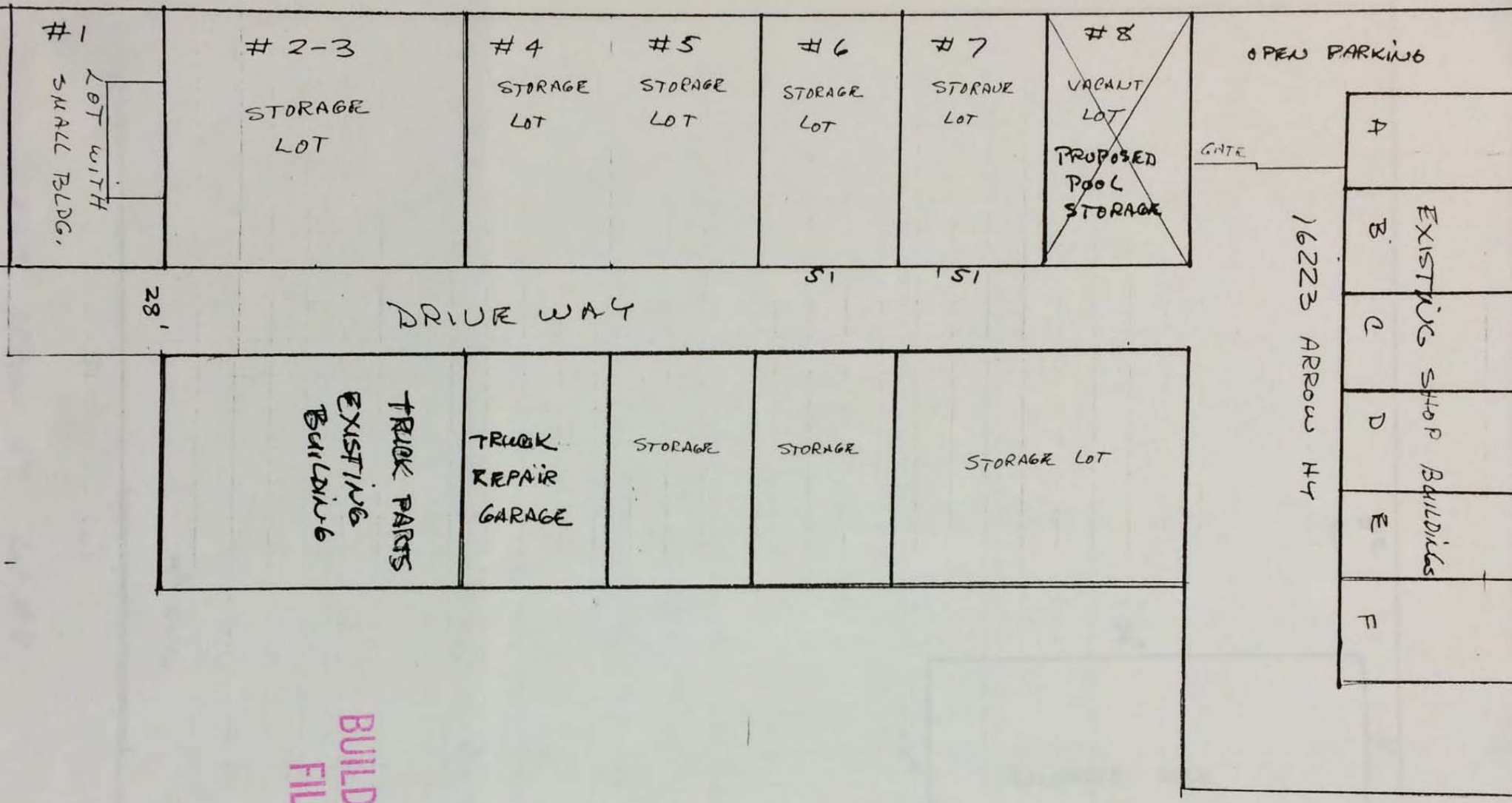
M

GREEN LINE FOR RECIRCULATION - COSTIC SOLUTION ADD AND TANK DRAIN
BLUE LINE FOR VACUUM PULL OFF FROM BUILDUP ON FILLING



L. A. COUNTY FIRE DEPT.
FIRE PREVENTION BUREAU
P. O. Box 3009, Terminal Annex
Los Angeles, California 90051

STORAGE LOTS FOR MOBIL OFFICE BLDGS.



BUILDING DEPT.
FILE COPY

76P254—1/58

Occupant

STATION NO. 29

BATT. 12

COUNTY OF LOS ANGELES
FIRE DEPARTMENT
FIRE PREVENTION BUREAU

DATE April 29 1966

PERMIT

PERMISSION IS HEREBY GRANTED

NAME O. R. Sommerstedt, Boat Builder

ADDRESS 16223 E. Arrow Highway, Irwindale

IN ACCORDANCE WITH SECTION 14.02 & 15.103 City Ordinance #154 OF ~~COUNTY ORDINANCE NO. 2947 N.S.~~ FOR THE FOLLOWING:

Spraying, dipping or application of flammable finishes. Storage & handling of flammable liquids.

SPECIAL PROVISIONS: This is a temporary p ermit for 6 months only for limited use of flammable liquids in boat building operatio ns. (fiberglassing)

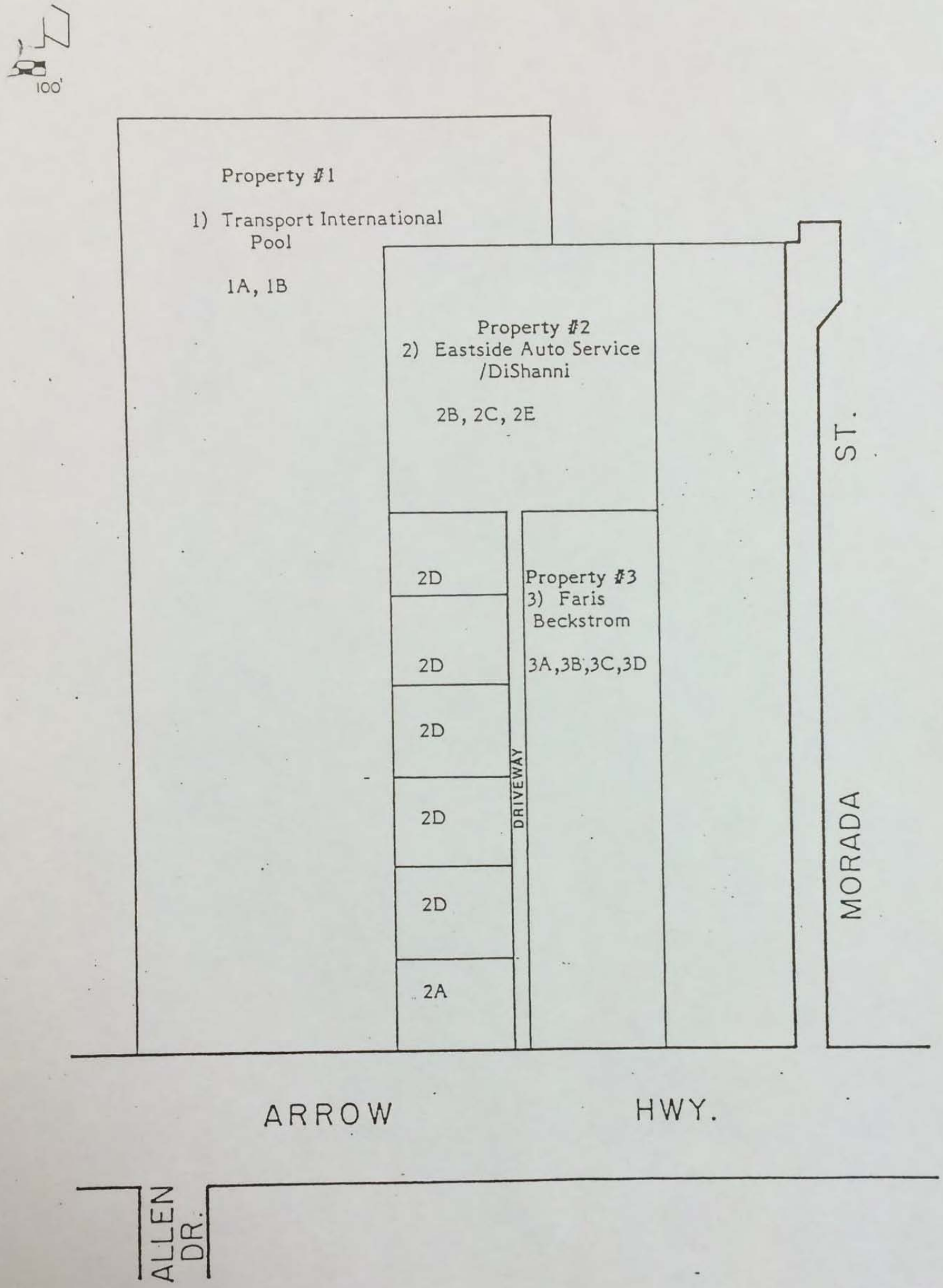
1. The west section of the building only shall be used for fiberglassing. No electric wiring will be permitted in this section of the bldg.
2. During fiberglassing operation all outside doors, windows, & overhead door shall be opened, for ventilation purposes.
3. The use of flammable liquidsinside will be limited to one drum of resin with top pump. Acetone used in an approved wash tank with normally closed lid. (over)

THIS PERMISSION GRANTED FOR 6 months or until revoked PERIOD. SUBJECT TO REVOCATION FOR PROPER CAUSE, FOR VIOLATION OF ORDINANCE #2947 N.S., OR WHEN NECESSARY FOR PUBLIC SAFETY. NONCOMPLIANCE WITH ANY PROVISION STIPULATED HEREIN CONSTITUTES A VIOLATION OF ABOVE ORDINANCE.

K. E. KLINGER, CHIEF
LOS ANGELES COUNTY FIRE DEPARTMENT

BY James C. Hazel
AUTHORIZED REPRESENTATIVE

THIS PERMIT SUBJECT TO ALL APPLICABLE REGULATIONS OF OTHER AGENCIES AND IS NOT TRANSFERABLE.


100'
Property #1
1) Transport International Pool
1A, 1B
Property #2
2) Eastside Auto Service /DiShanni
2B, 2C, 2E
2D
2D
2D
2D
2D
2A
DRIVEWAY
Property #3
3) Faris Beckstrom
3A,3B,3C,3D
MORADA ST.
ARROW HWY.
ALLEN DR.

INVESTIGATION REPORT

.t DAVID GATICA / CODE ENFORCEMENT OFFICER

ity of IRWINDALE, 5050 IRWINDALE AV Phone 818 962-3381

me B&M ASPHALT

ion Address 16223 E ARROW HWY, IRWINDALE

e(s) of Occurrence 12/10/96

Rec'd by E. GOODENOW

Date 12/10/96 Time 11:00 AM

Assigned to E GOODENOW

Referal: CRWQCB ( )SMD( ) LACoFCD ( ) LACoHD ( ) Other

ature of complaint(violation) OIL SPILL, CAUSED BY RAIN WATER OVERFLOWING 4 OR 5 OPEN 5-GAL PAILS OF OIL.

Special Instructions

REPORT: (Narrative description of observations including physical condition of site, types of materials and chemicals, trade names, extent of waste flow, damage observed, statements of witnesses, preventive measures taken, location of sample points and directives given to alleged discharger.)

I INVESTIGATED THIS COMPLAINT ON 12/10/96.

MR GATICA TOLD ME WHEN HE INITIATED THE COMPLAINT THAT HE HAD FIRST INSPECTED B&M ASPHALT TWO WEEKS EARLIER. AT THAT TIME HE HAD NOTICED SEVERAL UNCOVERED 5-GAL PAILS OF OIL OUTSIDE EXPOSED TO THE WEATHER AND HE HAD ASKED MR MORENO AND MR SLOVAK TO EITHER COVER THEM OR TO TRANSFER THE OIL TO A 55-GAL DRUM THAT COULD BE SEALED WITH A SCREW PLUG. HE RETURNED ON 12/9/96 AND NOTHING HAD BEEN DONE. IT RAINED THAT EVENING AND THE NEXT MORNING HE CAME BACK TO FIND THAT THE RAIN HAD OVERFLOWED OIL ONTO THE ASPHALT SURFACED YARD.

(OVER)

Witness/Contact FRANK MORENO Address/Title OWNER Phone 818 831-7535

Witness/Contact JERRY SLOVAK Address/Title MECHANIC Phone 818 831-7535

Witness/Contact Address/Title Phone

Sample(s) taken NONE Delivered to Photos attached(X) Ad'l pgs(X)

Citation Issued (X)Yes ( )No Type NOTICE Ord. 364 Section(s)

Follow-up Action Required

Investigation by [signature] Date 12/10/96

LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS
COMPLAINT REPORT

.ler DAVID GATICA / CODE ENFORCEMENT OFFICER Date 12/10/96

Company CITY OF IRWINDALE Time 11:00 AM

Telephone 818 962-3381 Assigned To ELDEN GOODENOW

NATURE OF COMPLAINT

Spill X Tank Leak ____ Illegal Dumping ____ Sewer Stoppage ____

Other ____

Company B & M ASPHALT

Location/Address 16223 E ARROW HWY, IRWINDALE, CA 91706

Contact FRANK MORENO / JERRY SLOVAK Telephone 818 331-7535

Chemical/Material OIL

Date of Occurrence 12/10/96 Action Taken INVESTIGATION

SPILL WAS CLEANED UP ON THE MORNING OF 12/10/96 BY B&M ASPHALT AND ADVANCED ENVIRONMENTAL.

38-0001 DPW 1/86

BUILDING A

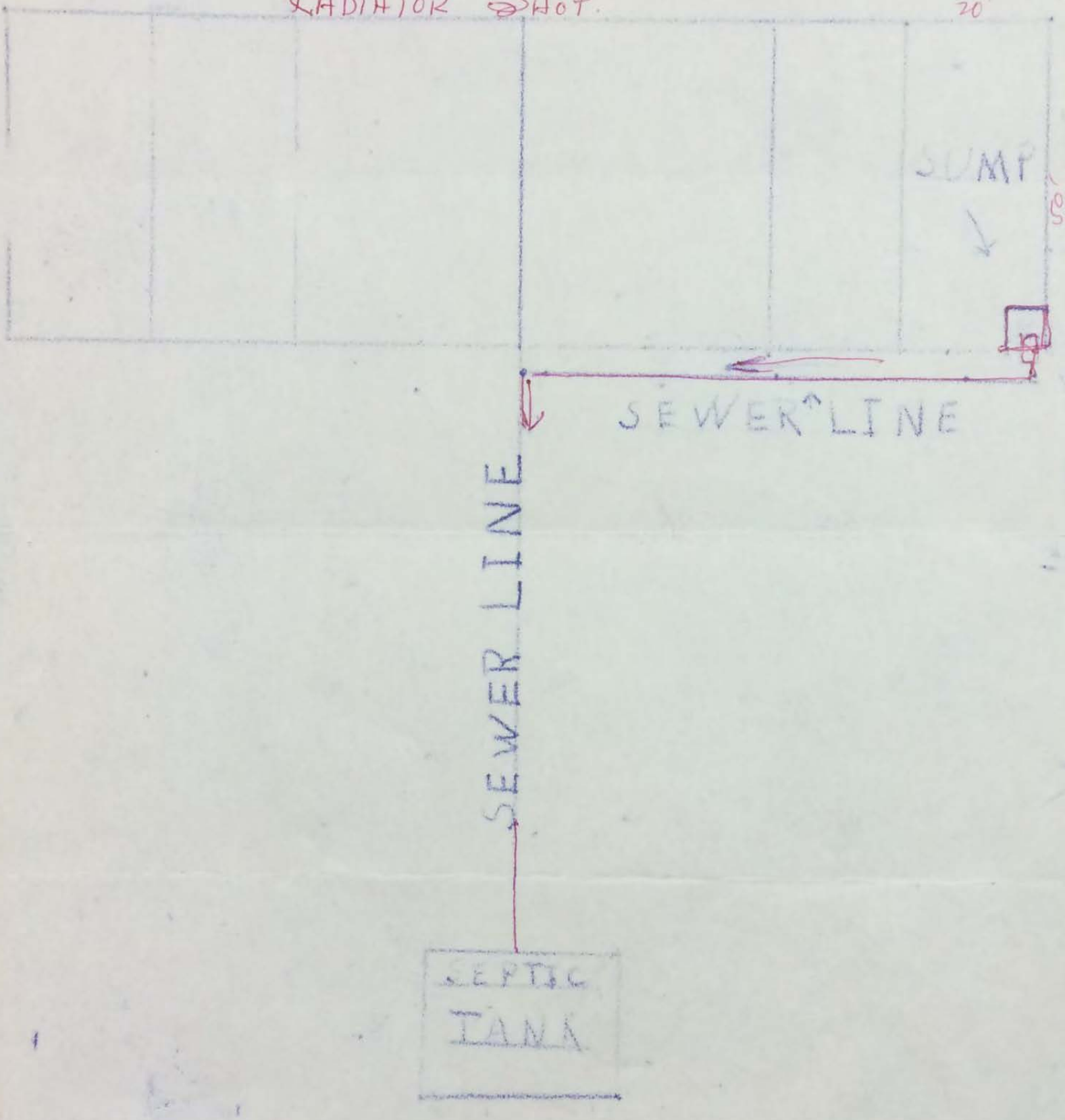
NORTH

WEST

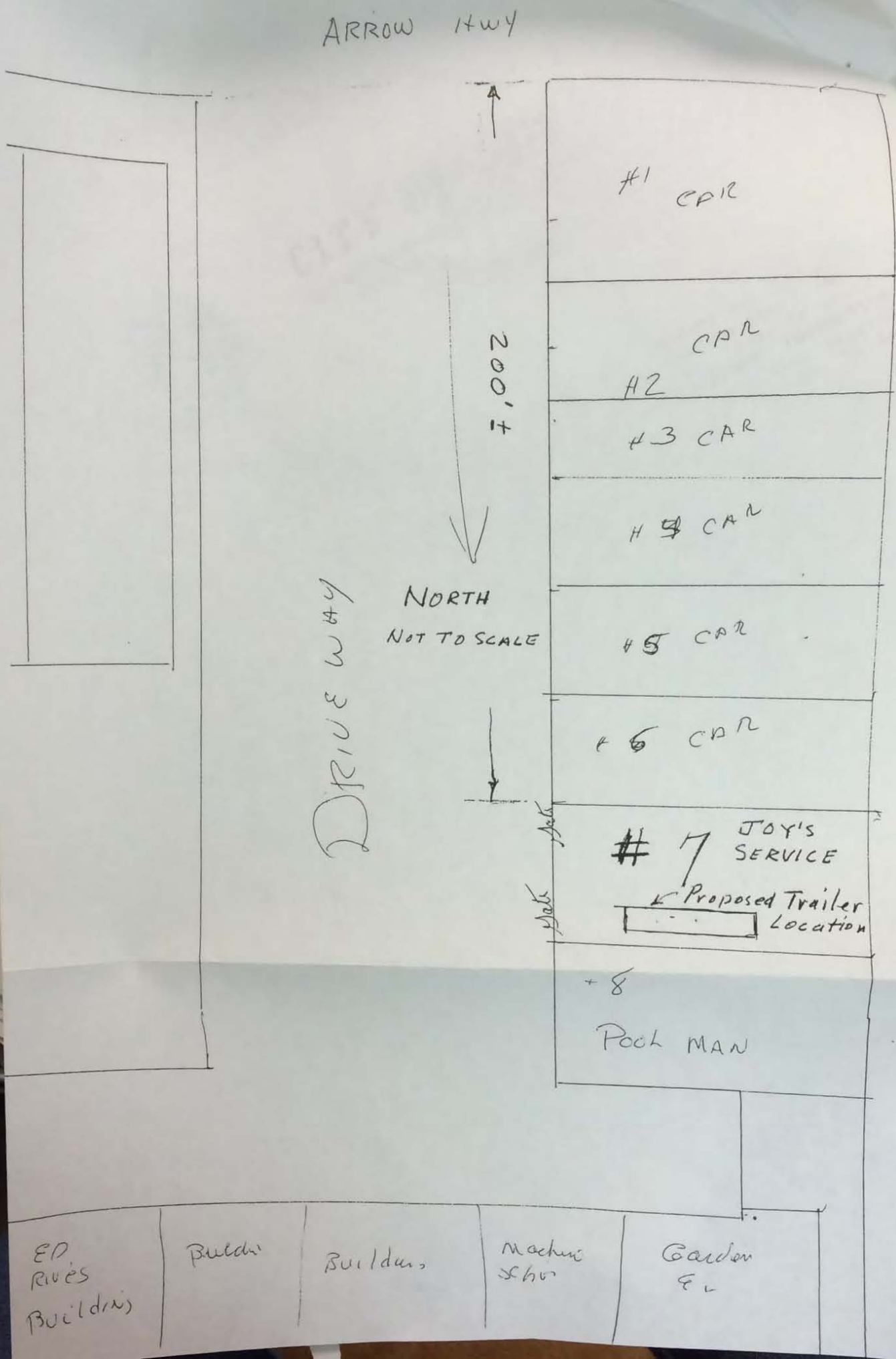
EAST

16233 E. ARROW HWY. Irwindale

RADIATOR SHOP.



SOUTH


ARROW HWY
#1 CAR
CAR
#2
#3 CAR
#4 CAR
#5 CAR
#6 CAR
#7 JOY'S SERVICE
Proposed Trailer Location
#8
POOL MAN
200'
NORTH
NOT TO SCALE
DRIVE WAY
ED RIVES BUILDING
Building
Building
Machine Shop
Garden

APPLICATION FOR BUILDING PER

COUNTY OF LOS ANGELES — **BUILDING AND SAFETY**

WORKERS' COMPENSATION DECLARATION

I hereby affirm that I have a certificate of consent to self insure, or a certificate of Workers' Compensation Insurance, or a certified copy thereof (Sec. 3800, Lab. C.)

Policy No. _____ Company _____

☐ Certified copy is hereby furnished.

☐ Certified copy is filed with the county building inspection department.

Date _____ Applicant _____

CERTIFICATE OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE

(This section need not be completed if the permit is for one hundred dollars ($100) or less.)

I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Workers' Compensation Laws.

Date _____ Applicant _____

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Workers' Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

LICENSED CONTRACTORS DECLARATION

I hereby affirm that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code, and my license is in full force and effect.

License Number _____ Lic. Class _____

Contractor _____ Date _____

☐ I am exempt under Sec. _____

B.&P.C. for this reason _____

_____ Date: _____

Signature _____

OWNER-BUILDER DECLARATION

I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Section 7031.5, Business and Professions Code):

☐ I, as owner of the property, or my employees with wages as their sole compensation, will do the work and the structure is not intended or offered for sale (Section 7044, Business and Professions Code).

☒ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Section 7044, Business and Professions Code).

CONSTRUCTION LENDING AGENCY

I hereby affirm that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C.).

Lender's Name _____

Lender's Address _____

I certify that I have read this application and state that the above information is correct. I agree to comply with all County ordinances and State laws relating to building construction, and hereby authorize representatives of this County to enter upon the above-mentioned property for inspection purposes.

Signature of Applicant or Agent — Date 10/23/84

76 A638A CE803A (REV. 1/80) 4/81

FOR APPLICANT TO FILL IN

BUILDING ADDRESS	16223 Arrow Hwy
CITY	Irwindale — ZIP 91706
SIZE OF LOT	50'X75' — NO. OF BLDGS. NOW ON LOT 0
TRACT / BLOCK / LOT NO.	
OWNER	Joe Dishanni — TEL. NO. 334-3146
ADDRESS	16223 Arrow Hwy
CITY	Irwindale — ZIP 91706
ARCHITECT OR ENGINEER	Owner — TEL. NO. 334-3146
ADDRESS	
CONTRACTOR	Owner — TEL. NO.
ADDRESS	LIC. NO.
CITY	LIC. CLASS
SQ. FT. SIZE / NO. OF STORIES / NO. OF FAMILIES	CHECK ONE
DESCRIPTION OF WORK	Foundation for 1 Ton gas chlorine cylinder + 500 gallon holding tank
USE OF EXISTING BLDG.	NEW ☐ ADD ☐ ALTER ☐ REPAIR ☐ DEMOL ☐
APPLICANT (PRINT)	Robert Saedi — TEL. NO. 969-0203
ADDRESS	422 Louise, Azusa, Ca.
PRESENT BUILDING ADDRESS	
LOCALITY	
MOVING CONTRACTOR	TEL. NO.
ADDRESS	

REQUIRED SET BACK	YARD	HWY	TOTAL SETBACK FROM PROP. LINE	EXIST. WIDTH
FRONT P.L.				
SIDE P.L.				

P.C. Fee $ 50.00	Permit Fee 30.00
	Issuance Fee 21.00
Investigation Fee	Total Fee 51.00

SEE REVERSE FOR EXPLANATORY LANGUAGE

BUILDING ADDRESS	16223 Arrow Hwy #5
LOCALITY	Irwindale
NEAREST CROSS ST.	Irwindale Ave
ASSESSOR MAP BOOK / PAGE / PARCEL	
USE ZONE	M2 — MAP NO. 150 H 309 — SPECIAL CONDITIONS
DISTRICT	5.06
GROUP	
TYPE CONST.	Foundation III
FIRE ZONE	
PROCESSED BY	Harris
STATISTICAL CLASSIFICATION	CLASS NO. 20 — DWELL. UNITS _____
APT. / CONDO.	
SEWER MAP	BK. PG.

VALIDATION

VALUATION $ 700

$

FINAL DATE 11-29-84

FINAL By

INSPECTOR COPY

45000A
#*****1
1**0100
***5100
1105-PA

L Ps

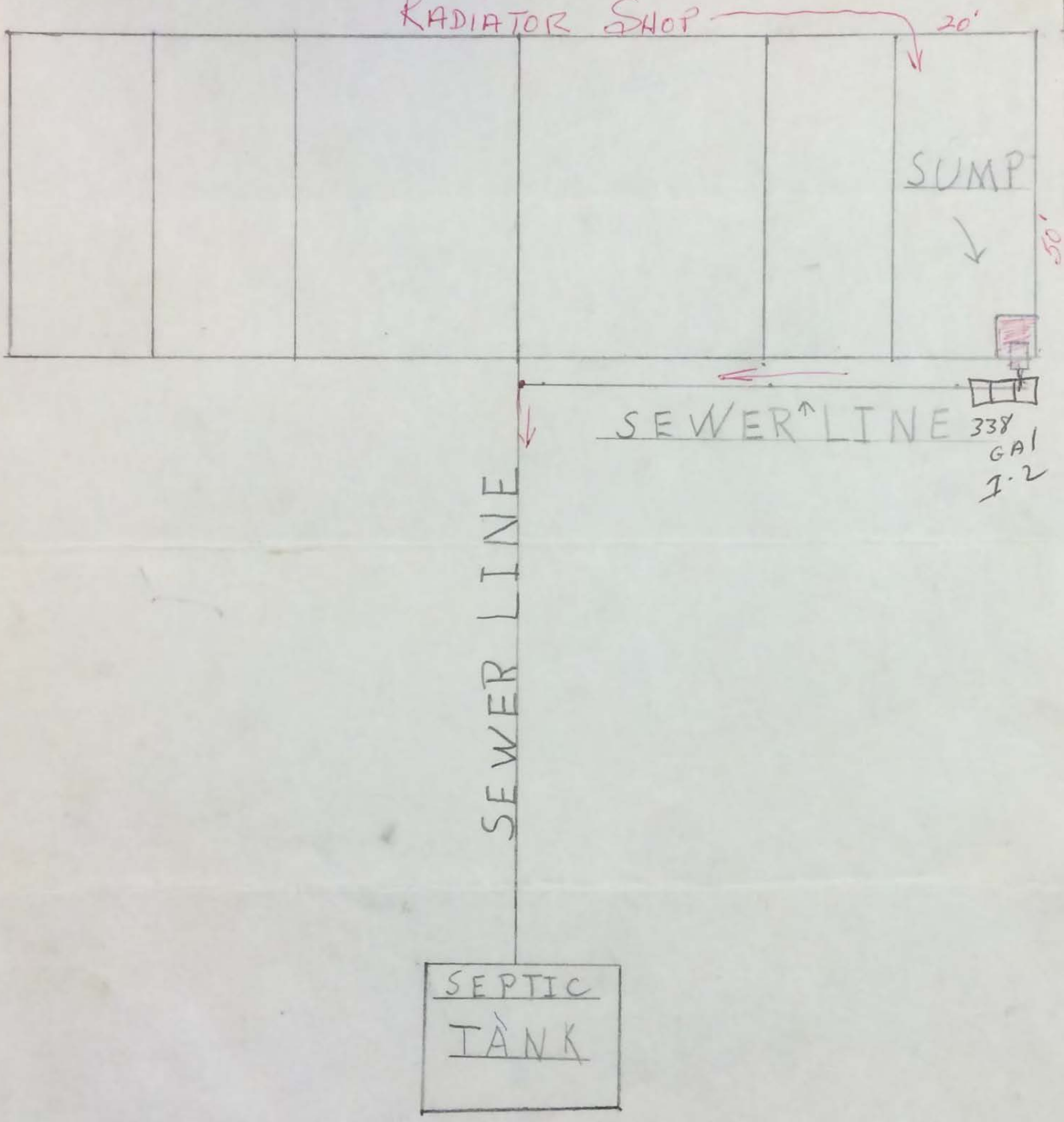
BUILDING "A"

NORTH

WEST

16233 E. ARROW HWY. Irwindale

EAST



SOUTH

76M444
CE 875 (11-84)

MISCELLANEOUS APPLICATION

COUNTY OF LOS ANGELES — BUILDING AND SAFETY DIVISION

1

#F

WORKERS' COMPENSATION DECLARATION

hereby affirm that I have a certificate of consent to self nsure, or a certificate of Workers' Compensation Insurance, or a certified copy thereof (Sec. 3800, Lab. C.).

Policy No. _____ Company _____

☐ Certified copy is hereby furnished.

☐ Certified copy is filed with the county building inspection department.

Date _____ Applicant _____

CERTIFICATE OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE

(This section need not be completed if the work involved by the permit is for one hundred dollars ($100) or less.)

I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Workers' Compensation Laws.

Date _____ Applicant _____

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Workers' Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

LICENSED CONTRACTORS DECLARATION

I hereby affirm that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code, and my license is in full force and effect.

License Number _____ Lic. Class _____

Contractor _____ Date _____

☐ I am exempt from the licensing requirements as I am a licensed architect or a registered professional engineer acting in my professional capacity (Section 7051, Business and Professions Code).

Lic. or Reg. No. _____ Date _____

HOME OWNER-BUILDER DECLARATION

I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Section 7031.5, Business and Professions Code):

☐ I, as owner of the property, will do the work and the structure is not intended or offered for sale (Section 7044, Business and Professions Code).

CONSTRUCTION LENDING AGENCY

I hereby affirm that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C.).

Lender's Name _____

Lender's Address _____

I certify that I have read this application and state that the above information is correct. I agree to comply with all County ordinances and State laws relating to building construction, and hereby authorize representatives of this County to enter upon the above-mentioned property for inspection purposes.

Edward M. Rives 8/7/91

Signature of Permittee — Date

FOR APPLICANT TO FILL IN

BUILDING ADDRESS	16223 E. ARROW Hwy UNIT F
LOCALITY	IRWINDALE CA. 91706
NEAREST CROSS ST.	E/o IRWINDALE N/SIDE ARROW
LEGAL DESCRIPTION / LOT NO. / BLOCK	
TRACT / NO. OF BLDGS. NOW ON LOT	
SIZE OF LOT / USE OF EXISTING BLDG.	
OWNER	CITY OF IRWINDALE C.R.A.
MAIL ADDRESS	5050 IRWINDALE AVE
CITY / TEL. NO.	IRWINDALE 962-3381

APPLICATION FOR

TRAILER USE ☐ GEOLOGY INSPECTION ☐

OCCUPANCY INSPECTION ☒

SAFETY PERMIT ☐ (LIST ITEMS BELOW)

DBA: RIVES ENTERPRISES
Owner: Edward M. Rives
Phone: 334-0066
Home 334-1733

SIZE OF EXISTING BLDG. 1,000 S.F. / NO. OF STORIES 1

PRESENT USE OF BUILDING

NO. OF EXISTING BUILDINGS ON LOT AND USE

NO. PARKING SPACES PROVIDED

PROPOSED USE OF BUILDING METAL FABRICATION -

PROPOSED MAX. OCC. 1

PERMIT FEE	No Fee
ISSUANCE FEE	
TOTAL FEE	No Fee

SEE REVERSE FOR EXPLANATORY LANGUAGE

BUILDING ADDRESS	16223 E. Arrow Hwy
LOCALITY	Irwindale
NEAREST CROSS ST.	
DISTRICT NO.	506
GROUP	B2
TYPE CONST.	
PROCESSED BY	Kenline
MAP NO. / HIGHWAY (CIRCLE)	STATE MAJOR SECOND LOCAL
USE ZONE	M2
SPECIAL CONDITIONS	
OCCUPANCY GROUP	B2
OCCUPANT LOAD	
EXIT HARDWARE: No Spec. Knowl. ☐ Panic Devices ☐	
NO. OF EXITS	
PARKING SPACES REQ'D / PROVIDED	

LIMITED TIME USE

FROM: DATE TO: DATE

FINAL APPROVAL 8/17/91 — INSPECTOR'S SIGNATURE

#30 12* *0.00 *0.00 1d 1. ***

1345

08-14-91

20

INSPECTOR COPY

City of Irwindale Administrative Rview
Approval By:

8/14/91

Signature — Date

76M444
20-0063DPW12/90

MISCELLANEOUS APPLICATION

COUNTY OF LOS ANGELES

CITY OF IRWINDALE

BUILDING AND SAFETY DIVISION

1

INSPECTOR COPY

DECLARATION

Certificate of consent to self Workers' Compensation Insurance, or Sec. 3800, Lab. C.)

Company _____

Copy is hereby furnished.

Filed copy is filed with the county building inspection Department.

Date _____ Applicant _____

CERTIFICATE OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE

This section need not be completed if the work involved by the permit is for one hundred dollars ($100) or less.)

I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Workers' Compensation Laws.

Date _____ Applicant _____

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Workers' Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

LICENSED CONTRACTORS DECLARATION

I hereby affirm that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code, and my license is in full force and effect.

License Number _____ Lic. Class _____

Contractor _____ Date _____

☐ I am exempt from the licensing requirements as I am a licensed architect or a registered professional engineer acting in my professional capacity (Section 7051, Business and Professions Code).

Lic. or Reg. No. _____ Date _____

HOME OWNER-BUILDER DECLARATION

I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Section 7031.5, Business and Professions Code):

☐ I, as owner of the property, will do the work and the structure is not intended or offered for sale (Section 7044, Business and Professions Code).

CONSTRUCTION LENDING AGENCY

I hereby affirm that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C.).

Lender's Name _____

Lender's Address _____

I certify that I have read this application and state that the above information is correct. I agree to comply with all County ordinances and State laws relating to building construction, and hereby authorize representatives of this County to enter upon the above-mentioned property for inspection purposes.

x L Huynh — Signature of Permittee

x 11/7/90 — Date

FOR APPLICANT TO FILL IN

BUILDING ADDRESS: 16223 ARROW HWY UNIT D

CITY: IRWINDALE, CA — ZIP: 91706

SIZE OF LOT: 10000 — NO. OF BLDGS. NOW ON LOT:

TRACT — BLOCK — LOT NO.

ASSESSOR MAP BOOK — PAGE — PARCEL

OWNER: IRWINDALE COMMUNITY — TEL NO. 818 962-3381

ADDRESS: 5050 N. IRWINDALE

CITY: IRWINDALE — ZIP: 91706

APPLICATION FOR

TRAILER USE ☐ — GEOLOGY INSPECTION ☐

OCCUPANCY INSPECTION ☒

SAFETY PERMIT ☐ (LIST ITEMS BELOW)

KIMINO

DBA: [redacted] FARside UFS

Owner: LUYEN HUYNH

Phone: 213 728 4226 (H)

WK 818 815 1867

SIZE OF EXISTING BLDG.: 10000 — NO. OF STORIES: ϕ

PRESENT USE OF BUILDING: [redacted]

UNKNOWN

NO. OF EXISTING BUILDINGS ON LOT AND USE

NO. PARKING SPACES PROVIDED: 2

PROPOSED USE OF BUILDING: CABINET SHOP

# of Employees

PROPOSED MAX. OCC.

APPLICANT (PRINT): LUYEN HUYNH — TEL NO. 213 728 4226

ADDRESS: 217 E Arbright St, Monterey Pk 91755

PERMIT FEE	350.00
ISSUANCE FEE	37.15
TOTAL FEE	387.15

SEE REVERSE FOR EXPLANATORY LANGUAGE

BUILDING ADDRESS: 16223 Arrow Hwy "D"

LOCALITY: Irwindale

NEAREST CROSS ST.

DISTRICT NO.	GROUP	TYPE CONST.	PROCESSED BY
S.Ch	B	VB	✓

MAP NO. — HIGHWAY (CIRCLE) — STATE MAJOR SECOND LOCAL

USE ZONE: M2 — SPECIAL CONDITIONS

OCCUPANCY GROUP: F

OCCUPANT LOAD: As posted

EXIT HARDWARE:

No Spec. Knowl. ☐

Panic Devices ☐

NO. OF EXITS

PARKING SPACES: REQ'D — PROVIDED

LIMITED TIME USE

FROM: DATE — TO: DATE

INSPECTOR'S SIGNATURE

FINAL APPROVAL

CITY OF IRWINDALE ADMINISTRATIVE REVIEW APPROVAL BY:

OK per Alex Dedios — SIGNATURE

11/6/96 — DATE

State of California—Environmental Protection Agency
Form Approved OMB No. 2050-0039 (Expires 9-30-99)
Please print or type. Form designed for use on elite (12-pitch) typewriter.

See Instructions on back of page 6.

Department of Toxic Substances Control
Sacramento, California

24080881

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA, CALL 1-800-852-7550

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. / Manifest Document No.: CAD982407314 5 0 1 0 1A
2. Page 1 of 1

Information in the shaded areas is not required by Federal law

GENERATOR

3. Generator's Name and Mailing Address
ARROW AUTOMOTIVE
16233 E. ARROW HIGHWAY, IRWINDALE, CA 91706
4. Generator's Phone 626 334-7801

A. State Manifest Document Number: 24080881
B. State Generator's ID:

5. Transporter 1 Company Name: IDR ENVIRONMENTAL SERVICES
6. US EPA ID Number: CAR000045278

C. State Transporter's ID [Reserved.]
D. Transporter's Phone: 626-334-5596

7. Transporter 2 Company Name:
8. US EPA ID Number:

E. State Transporter's ID [Reserved.]
F. Transporter's Phone:

9. U.S. Designated Facility Name and Site Address
HWY 95, 11 MI S. OF BEATTY
BEATTY, NV 89003
10. US EPA ID Number: NVT330010000

G. State Facility's ID:
H. Facility's Phone: 800-239-3943

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. RQ, HAZARDOUS WASTE, SOLID, (ALUMINUM FRAME, LEAD) 9, NA3077, PGIII	001	DM	00200	P	State 332 / EPA/Other D008
b.					State / EPA/Other
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above
11A. ALUMINUM FRAME, LEAD
PROFILE #: 07-012-8007-7B

K. Handling Codes for Wastes Listed Above
a. b. c. d.

15. Special Handling Instructions and Additional Information
24-Hour Phone 626-334-5596
ERG 11A. 171

BILL TO: IDR ENVIRONMENTAL

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Dawn Gores | Signature: Dawn Gores | Month 02 Day 25 Year 05

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Raul Gutierrez | Signature: Raul Gutierrez | Month 02 Day 25 Year 05

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: | Signature: | Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: | Signature: | Month Day Year

DO NOT WRITE BELOW THIS LINE.

White: TSDF SENDS THIS COPY TO DTSC WITHIN 35 DAYS
Ta: P.O. Box 3000, Sacramento, CA 95812-3000

Please print or type
(Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: N O N H A Z A R D O U S
Manifest Doc. No.: 0 2 4 0 5
2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address
Arrow Automotive Service
16233 E. Arrow Hwy., Irwindale, CA 91706

4. Generator's Phone (626) 334-7801

5. Transporter 1 Company Name: IDR Environmental Services, Inc.
6. US EPA ID Number: C A R 0 0 0 0 4 5 2 7 8
A. Transporter's Phone: (626) 334-5596

7. Transporter 2 Company Name
8. US EPA ID Number
B. Transporter's Phone

9. Designated Facility Name and Site Address
Remedy Environmental Services
3200 E. Frontera Street, Anaheim, CA 92806
10. US EPA ID Number: C A L 0 0 0 2 0 0 5 0 0
C. Facility's Phone: (714) 630-2307

11. Waste Shipping Name and Description	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. (clarifier wastewater) Non-Hazardous Waste, Liquid	0 0 1	T T	1500	G
b.				
c.				
d.				

D. Additional Descriptions for Materials Listed Above
11a. Clarifier wastewater - Profile#_____

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
In case of emergency, call IDR at (626) 334-5596
Bill to: IDR EnvironmentaL Services, Inc.

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.
Printed/Typed Name: Raymond A. Arrow Automotive Service
Signature
Month 02 Day 24 Year 05

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Raul Gutierrez
Signature
Month 02 Day 24 Year 05

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.
Printed/Typed Name
Signature
Month Day Year

Printed by J. J. KELLER & ASSOCIATES, INC.
Neenah, WI 54957-0368

GENERATOR'S COPY

TO REORDER CALL 1-800-327-6868

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.
Manifest Doc. No. 501098
2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address
ARROW AUTOMOTIVE
100 S. IRWINDALE AVE, AZUSA, CA 91702
4. Generator's Phone (626) 334-7801

5. Transporter 1 Company Name: IDR ENVIRONMENTAL
6. US EPA ID Number: CAR000045278
A. Transporter's Phone: (626) 334-5596

7. Transporter 2 Company Name
8. US EPA ID Number
B. Transporter's Phone

9. Designated Facility Name and Site Address
AZUSA LAND RECLAMATION
1211 WEST GLADSTONE ST.
AZUSA, CA 91702
10. US EPA ID Number: CAD009007626
C. Facility's Phone

11. Waste Shipping Name and Description	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. NON-HAZARDOUS WASTE, SOLID (CONTAINING NON-FRIABLE ASBESTOS)	001	CF	00001	Y
b.				
c.				
d.				

D. Additional Descriptions for Materials Listed Above
11A. NON-FRIABLE ASBESTOS
1 X 150 X

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
WEAR APPROPRIATE PROTECTIVE GEAR
24 HOUR PHONE (626) 334-5596
BILL TO: IDR ENVIRONMENTAL
Jobsite: 16233 E Arrow Hwy
Irwindale, CA 91706

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: Dawn Burer
Signature: Dawn Burer
Month Day Year: 02 12 05

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Raul Gutierrez
Signature: Raul G
Month Day Year: 02 12 05

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name
Signature
Month Day Year

ORIGINAL – RETURN TO GENERATOR

OFFICE OF COUNTY HEALTH DEPARTMENT

June 19, 1957

Division of Building and Safety
County of Los Angeles
213 East Foothill Blvd.,
Azusa, California

Gentlemen:

SUBJECT: Sewage disposal system for auto supply building located at 16233 Arrow Highway, Azusa, California. Contractor: Butler Manufacturing Company, P.O.Box 431, South Gate, California.

The Los Angeles County Health Department approves the use of a 750 gallon septic tank with the effluent discharging into a seepage pit as the method of sewage disposal for auto supply (6 employees) building located at 16233 Arrow Highway, Azusa, California.

Plumbing fixtures at this location will consist of two toilets and two lavatories.

Very truly yours,

ROY D. GILBERT, M.D.
Health Officer

Lyle C. Haynes

LYLE C. HAYNES, R. S., Chief
Section of Water and Sewerage

LCH:db

cc: Butler Mfg. Company

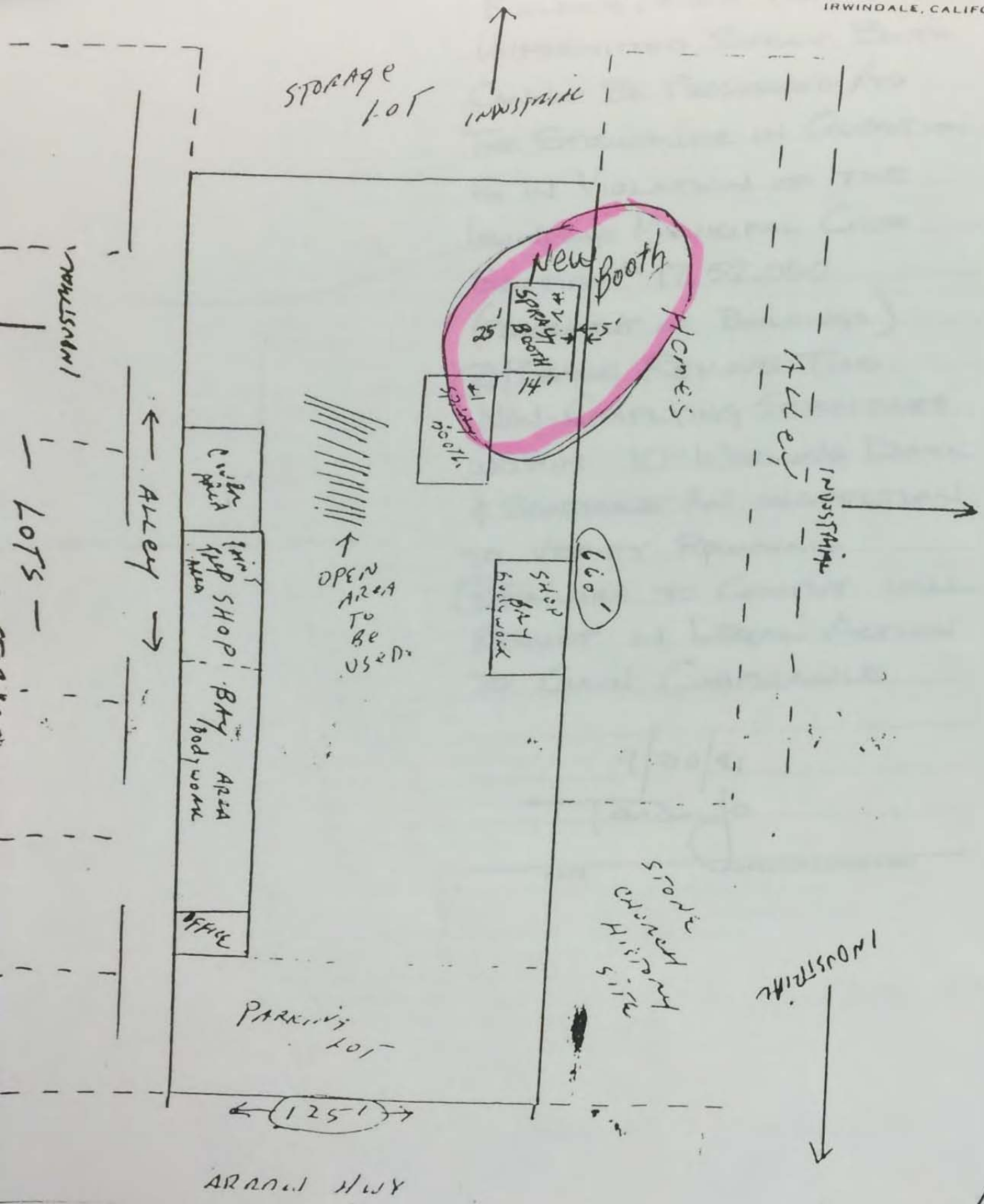
AGENDA
ITEM 3.I

OCT 10 1991

Arrow Automotive Service

COMPLETE AUTO RECONSTRUCTION

TELEPHONE: (213) 334-7801
POST OFFICE BOX 2108
16233 E. ARROW HIGHWAY
IRWINDALE, CALIFORNIA 91706



ARROW AUTOMOTIVE

APPLICATION FOR BUILDING PERMIT

COUNTY OF LOS ANGELES

BUILDING AND SAFETY

WORKER'S COMPENSATION DECLARATION

I hereby affirm that I have a certificate of consent to self insure, or a certificate of Workers' Compensation Insurance, or a certified copy thereof (Sec. 3800, Lab. C.)

Policy No. _____ Company _____

☐ Certified copy is hereby furnished.

☐ Certified copy is filed with the county building inspection department.

Date _____ Applicant _____

CERTIFICATE OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE

(This section need not be completed if the permit is for one hundred dollars ($100) or less.)

I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Workers' Compensation Laws.

Date 10-22-91 Applicant [signature]

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Workers' Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

LICENSED CONTRACTORS DECLARATION

I hereby affirm that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code, and my license is in full force and effect.

License Number _____ Lic. Class _____

Contractor _____ Date _____

☐ I am exempt under Sec. _____

B.&P.C. for this reason _____

_____ Date: _____

Signature _____

☒ I, as owner of the property, or my employees with wages as their sole compensation, will do the work and the structure is not intended or offered for sale (Section 7044, Business and Professions Code.)

☐ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Section 7044, Business and Professions Code.)

CONSTRUCTION LENDING AGENCY

I hereby affirm that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C.).

Lender's Name NONE

Lender's Address _____

I certify that I have read this application and state that the above information is correct. I agree to comply with all county ordinances and State laws relating to building construction, and hereby authorize representatives of this County to enter upon the above-mentioned property for inspection purposes.

[signature] 10-22-91

Signature of Applicant or Agent — Date

x 4-10-92

76 A638A 20-0010 DPPW 6/89

FOR APPLICANT TO FILL IN

BUILDING ADDRESS	16233 E ARROW HWY
CITY	IRWINDALE
ZIP	91706
SIZE OF LOT	125 X 660
NO. OF BLDGS. NOW ON LOT	
TRACT	4316
BLOCK	
LOT NO.	POR 11 12
ASSESSOR MAP BOOK	
PAGE	
PARCEL	
OWNER	Robert A. Faris
TEL. NO.	334-2801
ADDRESS	16233 E ARROW HWY
CITY	IRWINDALE
ZIP	91706
ARCHITECT OR ENGINEER	
TEL. NO.	
ADDRESS	
CONTRACTOR	OWNER BUILDER
TEL. NO.	
ADDRESS	
LIC. NO.	
CITY	
LIC. CLASS	
SQ. FT. SIZE	502
NO. OF STORES	
NO. OF FAMILIES	
DESCRIPTION OF WORK	$10,000 BOLTED METAL SPRAY BOOTH (USED) W/ROOF CANOPY $4757
USE OF EXISTING BLDG.	SAME AS ABOVE
APPLICANT (PRINT)	
TEL. NO.	
ADDRESS	

NEW ☐ ADD ☐ ALTER ☐ REPAIR ☐ DEMOL ☐ URM ☐

WILL THE APPLICANT OR FUTURE BUILDING OCCUPANT HANDLE A HAZARDOUS MATERIAL OR A MIXTURE CONTAINING A HAZARDOUS MATERIAL EQUAL TO OR GREATER THAN THE AMOUNTS SPECIFIED ON THE HAZARDOUS MATERIALS INFORMATION GUIDE?

YES ☐ NO ☒

WILL THE INTENDED USE OF THE BUILDING BY THE APPLICANT OR FUTURE BUILDING OCCUPANT REQUIRE A PERMIT FOR CONSTRUCTION OR MODIFICATION FROM THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD) SEE PERMITTING CHECKLIST FOR GUIDELINES.

YES ☒ NO ☐

I HAVE READ THE HAZARDOUS MATERIALS INFORMATION GUIDE AND THE SCAQMD PERMITTING CHECKLIST. I UNDERSTAND MY REQUIREMENTS UNDER THE LOS ANGELES COUNTY CODE, TITLE 2, CHAPTER 2.20 SECTIONS 2.20.100 THROUGH 2.20.140 CONCERNING HAZARDOUS MATERIALS REPORTING AND FOR OBTAINING A PERMIT FROM THE SCAQMD.

[signature]

OWNER OR AGENT

P.C. FEE	393.14	PERMIT FEE	$24.14
add P.C. 4434		ISSUANCE FEE	37.15
INVESTIGATION FEE		TOTAL FEE	$61.29

SEE REVERSE FOR EXPLANATORY LANGUAGE

BUILDING ADDRESS	16233 E ARROW HWY IRWINDALE
LOCALITY	MORADA & ARROW HWY
NEAREST CROSS ST.	
USE ZONE	M2
MAP NO.	150H309
SPECIAL CONDITIONS	
WITHIN 1000 FT. OF SCHOOL?	YES ☐ NO ☒
DISTRICT	S.06
GROUP	B2
TYPE CONST.	open Booth
FIRE ZONE	3
PROCESSED BY	Kimbell
STATISTICAL CLASSIFICATION	
APT	
CONDO	
CLASS NO.	
DWELL UNITS	

REQUIRED SET BACK	YARD	HWY	TOTAL SETBACK FROM PROP LINE	EXIST WIDTH
FRONT P L				
SIDE P L				

SEWER MAP

BK PG

VALUATION $ ~~15,000~~

$ ~~31,000~~ 19,800 per B. Hooper 4/2/92

LDMA P/C #

LDMA Perm #

FINAL DATE 5/20/92

FINAL BY [signature]

P.C. # 1602

#23 23 393.14CH

01* 10-24-91

*4434 CK TL

1 1. ***E

21.90 $

04-10-92

$0

VALIDATION

#1.

01* *56.29

*56.29 CK TL

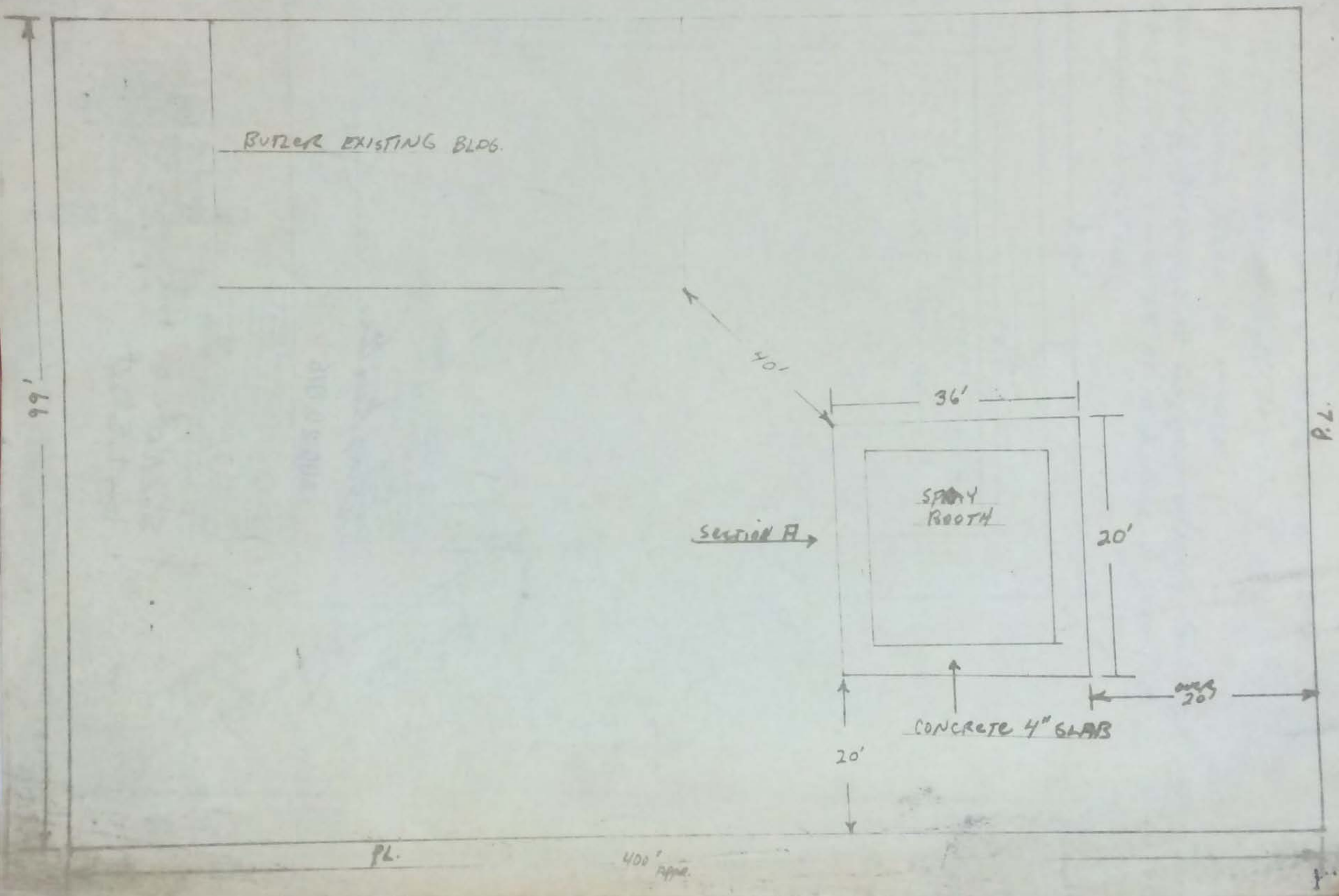
1 1. ***E

21.91 $

04-10-92

INSPECTOR COPY

PLAN


BUTLER EXISTING BLDG.
40'
36'
SPRAY BOOTH
SECTION A
20'
20'
CONCRETE 4" SLAB
99'
P.L.
P.L.
400' APPR.

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
Environmental Programs Division
900 S. Fremont Avenue
Alhambra, CA 91803-1331
Telephone: (626) 458-3517 Fax: (626) 458-3569

To be completed by DPW only

APP. NO. 557912
FILE 26513-46218
FEE $ 111 AREA 33
CHECK • CASH •

APPLICATION FOR CLOSURE

FACILITY/SITE INFORMATION & ADDRESS

FACILITY/SITE NAME Arrow Hwy. Site	C/O
ADDRESS 16233 Arrow Hwy.	CROSS STREET E/O Morada St.
CITY Irwindale STATE CA ZIP CODE 91706	PHONE (626) 430-2210
EMERGENCY CONTACT Kwok Tam, PE	PHONE (626) 430-2212

PROPERTY OWNER INFORMATION & ADDRESS

NAME City of Irwindale	C/O
MAILING ADDRESS 5050 N. Irwindale Ave.	
CITY Irwindale STATE CA ZIP CODE 91706	PHONE (626) 430-2210

CONTRACTOR INFORMATION & ADDRESS **OWNER/OPERATOR AS CONTRACTOR**

NAME City of Irwindale	C/O
MAILING ADDRESS 5050 N. Irwindale Ave.	CONTRACTOR LICENSE NO. N/A
CITY Irwindale STATE CA ZIP CODE 91706	PHONE (626) 430-2210

CLOSURE REQUESTED

☐ PERMANENT, FACILITY REMOVAL (SEE CONDITIONS A, B, C, E, and F on back)
☑ PERMANENT, CLOSURE IN PLACE (SEE CONDITIONS A, B, C, D, and F on back)

DESCRIPTION OF WASTE GENERATING OPERATIONS/FACILITIES TO BE CLOSED

TYPE OF BUSINESS Parking Lot	IW PERMIT NUMBER 467910
FEDERAL SIC CODE N/A WASTEWATER PRODUCING OPERATIONS None	
FACILITY(S) TO BE CLOSED JPHV_1200_Stormwater_Interceptor	
ATTACH PLOT PLAN SHOWING LOCATION OF FACILITIES TO BE CLOSED	

COMPLETE THE FOLLOWING:

	YES	NO
HAS AN UNAUTHORIZED RELEASE EVER OCCURRED AT THIS SITE?	☐	☑
HAVE STRUCTURAL REPAIRS EVER BEEN MADE TO THIS FACILITY?	☐	☑
WILL NEW FACILITIES BE INSTALLED AFTER CLOSURE?	☐	☑
WILL INDUSTRIAL WASTE GENERATING OPERATION REMAIN AFTER CLOSURE?	☐	☑

>>>IF THE ANSWER TO ANY QUESTION ABOVE IS YES, ATTACH EXPLANATION<<<

NOTICE: WASTEWATER AND/OR RESIDUES THAT MAY BE LEFT IN FACILITIES TO BE CLOSED AND CONTAMINATED SOILS MAY BE A HAZARDOUS WASTE WHICH MUST BE TRANSPORTED AND DISPOSED OF PURSUANT TO CHAPTER 6.5, OF THE CALIFORNIA HEALTH & SAFETY CODE. FAILURE TO COMPLY MAY BE PROSECUTED AS A FELONY VIOLATION.

BY SIGNING BELOW AND UNDER PENALTY OF PERJURY, THE APPLICANT CERTIFIES THAT ALL STATEMENTS AND DISCLOSURES ABOVE ARE TRUE AND CORRECT AND THAT THEY HAVE READ AND AGREE TO ABIDE BY THIS CLOSURE AUTHORIZATION AND ALL CONDITIONS AND LIMITATIONS ON THE REVERSE SIDE OF THIS FORM AND ADDITIONAL CONDITIONS THAT MAY BE ATTACHED.

APPLICANTS SIGNATURE Kwok Tam, PE	DATE 12/13/2008
APPLICANT'S NAME (PRINT) Irwindale CRA - Community Redvlpmt. Agency	PHONE (626) 430-2212
AS: ☑ OWNER ☐ OPERATOR ☐ CONTRACTOR	

To be completed by DPW only

PURSUANT TO SECTION 20.36.220, LOS ANGELES COUNTY CODE*, PERMISSION IS HEREBY GRANTED TO PROCEED WITH THE CLOSURE DESCRIBED ABOVE SUBJECT TO THE ATTACHED CONDITIONS AND LIMITATIONS. THIS AUTHORIZATION EXPIRES 180 DAYS FROM THE DATE BELOW. YOU MUST CONTACT THE FIELD OFFICE INDICATED ON THE ENCLOSED NOTIFICATION REQUIREMENTS SHEET NO LATER THAN 72 HOURS PRIOR TO THE START OF WORK. PLEASE NOTE THAT INSPECTORS CAN BE CONTACTED FROM 8:00 a.m. to 9:30 a.m. MONDAY THROUGH FRIDAY ONLY.

SOIL SAMPLING REQUIRED: • NO • YES (SEE ATTACHED)

JAMES A. NOYES
Director of Public Works

BY [signature] DATE 3-3-05

* • CITY MUNICIPAL SECTIONS APPLY.

Complete the Attached Certification of Compliance with Los Angeles County Lobbyist Ordinance

76A638A DBS-3
11-55

APPLICATION FOR BUILDING PERMIT

1

DIVISION OF BUILDING AND SAFETY
Department of County Engineer
County of Los Angeles
JOHN A. LAMBIE, COUNTY ENGINEER
CASSATT D. GRIFFIN, SUP'T OF BUILDING

BUILDING ADDRESS 6233 E. ARROW HIGHWAY
LOCALITY Azusa
NEAREST CROSS ST. Vincent

DISTRICT NO.	GROUP	TYPE CONST.	SEWER	MAP BK	MAP PG
99-10	E-4	V			

FOR APPLICANT TO FILL IN

BUILDING ADDRESS 6238 E. ARROW HIGHWAY
LOT NO. ~~PORTION 10 & 11~~ BLOCK
TRACT 4316
SIZE OF LOT 201.50 X 665.06 NO. OF BLDGS. NOW ON LOT 0
USE OF EXISTING BLDG. —

MAP NUMBER 2353 STATE HWY YES NO
USE ZONE B-1e M-2
SPECIAL CONDITIONS Ord 1494 Map 5904 A. M. Smith 5/28/57

BUILDING SETBACK	YARD	HWY	STREET NAME	EXIST. WIDTH
FRONT P. L.	—	100'	E. ARROW HWY	45'
SIDE P. L.	50	50		

OWNER EASTSIDE AUTOMOTIVE SERVICE
MAIL ADDRESS 2840 BROOKLYN AVE.
CITY LOS ANGELES 33 TEL. NO. AN 92195
ARCHITECT OR ENGINEER F E MACDONALD TEL. NO. AT-27603
ADDRESS 215 W. LAS TUNAS, SAN GABRIEL
CONTRACTOR BUTLER MFG TEL. NO. LO 7-2303
ADDRESS 4014 FIRESTONE, SOUTH GATE

0	TRACT DWELL.	1 UNIT	5	INDUSTRIAL
1	DWELL.	1 UNIT	6	PUBLIC BLDG.
2	DUPLEX	2 UNITS	7	ADDN., ALT., ETC.
3	APT.	___ UNITS	8	MISCEL.
4	COMMERCIAL			

16

DESCRIPTION OF WORK

NEW ✓ ADD ALTER REPAIR DEMOLISH
SQ. FT. SIZE 2000 NO. OF STORIES ONE NO. OF FAMILIES 0
USE OF STRUCTURE AUTOMOTIVE REPAIR

SIGNATURE OF APPLICANT Ken Gilpin
ADDRESS 4014 Firestone, South Gate

INSPECTION RECORD

Plan check fee will be forfeited if zoning not approved
Ken Gilpin
for Butler Mfg

APPROVALS

	DATE	INSPECTOR'S SIGNATURE
FOUNDATION: LOCATION FORMS, MATERIALS	6/25/57	
FRAME: FIRE STOPS, BRACING, BOLTS	10/7/57	
FURNACE: LOCATION, GAS VENT, DUCTS		
LATH, INT.		
LATH, EXT.		
HOUSE NUMBER CORRECT AND POSTED		
FINAL	10/11/57	

$ 12,000.
VALUATION

P. C. FEE $ 14.00
FEE $ 28.00

I HEREBY ACKNOWLEDGE THAT I HAVE READ THIS APPLICATION AND STATE THAT THE ABOVE IS CORRECT AND AGREE TO COMPLY WITH ALL COUNTY ORDINANCES AND STATE LAWS REGULATING BUILDING CONSTRUCTION.

SIGNATURE OF PERMITTEE Kenneth Gilpin for Butler Mfg Co
ADDRESS 4014 Firestone South Gate

JOHN A. LAMBIE, COUNTY ENGINEER

VALIDATION CK MO CASH

CLYDE N. DIRLAM, CHIEF BLDG. INSPECTOR

1Co 0 2 4 5 MN 1 4 1 6 14.00 7 8 0 0 MN 4 1 28.00

PLANS MUST BEAR INDUSTRIAL WASTE CLEARANCE

Schentzer

B Parker

CITY OF IRWINDALE

76A638A CE #803 2-63

APPLICATION FOR BUILDING PERMIT

1

COUNTY OF LOS ANGELES
DEPARTMENT OF COUNTY ENGINEER
BUILDING AND SAFETY DIVISION
JOHN A. LAMBIE, COUNTY ENGINEER
WILLIAM A. JENSEN, SUP'T OF BUILDING

FOR APPLICANT TO FILL IN

BUILDING ADDRESS 16233 E. ARROW HWY

LOT NO. PORTION 11 & 12 BLOCK

TRACT 4316 Parcel (1) (2) (3)

SIZE OF LOT 201.5 X 625 NO. OF BLDGS. NOW ON LOT ONE

USE OF EXISTING BLDG. AUTO REPAIR

OWNER EASTSIDE AUTOMOTIVE TEL. NO. ED 47801

ADDRESS 16233 E. ARROW HWY

ARCHITECT OR ENGINEER TEL. NO.

ADDRESS

CONTRACTOR OWNER TEL. NO. ED 47801

ADDRESS SAME

DESCRIPTION OF WORK

NEW ✓ ADD ALTER REPAIR DEMOLISH

SQ. FT. SIZE 8000 NO. OF STORIES 1 NO. OF FAMILIES

USE OF STRUCTURE LIGHT MFG.

SIGNATURE OF APPLICANT

VALUATION $ 30 000 00

P.C. FEE $ 53.50 PMT. FEE $ 107.00

I HEREBY ACKNOWLEDGE THAT I HAVE READ THIS APPLICATION AND STATE THAT THE ABOVE IS CORRECT AND AGREE TO COMPLY WITH ALL COUNTY ORDINANCES AND STATE LAWS REGULATING BUILDING CONSTRUCTION. I CERTIFY THAT IN DOING THE WORK AUTHORIZED HEREBY I WILL NOT EMPLOY ANY PERSON IN VIOLATION OF THE LABOR CODE OF THE STATE OF CALIFORNIA RELATING TO WORKMEN'S COMPENSATION INSURANCE.

SIGNATURE OF PERMITTEE

ADDRESS

BUILDING ADDRESS 16233 ARROW HIWAY

LOCALITY IRWINDALE

NEAREST CROSS ST. VINCENT

DISTRICT NO.	GROUP	TYPE CONST.	PROCESSED BY
5.06	F2	V	Aguerrebere

STATISTICAL CLASSIFICATION CLASS. NO. 17 DWELL. UNITS ✓ SEWER MAP BK ✓ PG

WATER CERTIFICATE: NOT REQUIRED ✓ RECEIVED ☐

MAP NO. 2353 HIGHWAY (CIRCLE) STATE MAJOR SECOND. LOCAL

USE ZONE M-2 SPECIAL CONDITIONS

BUILDING SETBACK	YARD	HWY	STREET NAME	EXIST. WIDTH
FRONT P. L.		50	ARROW HIWAY	80
SIDE P. L.				

OK AS TO ZONING — NAF. LANDSCAPE + PHNIC PLAN TO FOLLOW. 50' S/YARD SETBACK DOES NOT APPLY TO A-1 ZONE AS PER CITY ATTORNEY 7/13/65. (~~[illegible]~~) subject to zone change

APPROVALS	DATE	INSPECTOR'S SIGNATURE
FOUNDATION: LOCATION FORMS, MATERIALS	2-21-66	[illegible]
FRAME: FIRE STOPS, BRACING, BOLTS	4-13-66	Coster
FURNACE: LOCATION, GAS VENT, DUCTS		
LATH, INT.		
LATH, EXT.	5-6-66	Cosby
HOUSE NUMBER CORRECT AND POSTED	6-13-66	Coster
FINAL		

INSPECTOR COPY

JOHN F. LEWIS, PRINCIPAL STRUCTURAL ENGINEER

PLAN CHECK VALIDATION (CK.) M.O. CASH

PERMIT VALIDATION (CK.) M.O. CASH

LAC 0 8 6 1 3 JUL 1 4 2 3 53.50

LAC 0 9 4 6 3 DEC 3 1 107.00

Irwindale Housing
16203 - 16233 Arrow Highway
Baldwin Park, CA 91706

Inquiry Number: 3975136.5
June 19, 2014

The EDR-City Directory Abstract

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

Appendix F

Arrow Highway Business Park Acoustical Analysis

(Environmental Impact Sciences, August 2014)

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Arrow Highway Business Park
Acoustical Analysis

16203-16233 Arrow Highway
Irwindale, California

Prepared for:
City of Irwindale
Community Development Department
Gus Romo, Planning Director
5050 North Irwindale
Irwindale, California 91706

Prepared by:
Environmental Impact Sciences
26051 Via Concha
Mission Viejo, California 92691-5614

August 2014

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1.0 METHODOLOGY

The following analysis provides a discussion on the fundamentals of sound, examines federal, State, and City noise guidelines and policies, reviews noise levels at the project site (16203-16233 Arrow Highway, Irwindale) and at existing receptor locations, and evaluates potential noise impacts associated with the project's construction and operation. Modeled traffic noise levels are based upon vehicle data contained in the traffic-projections presented in "Warehouse/Manufacturing Project, 16203-16233 Arrow Highway, City of Irwindale" (Sasaki Transportation Services, August 13, 2014). This evaluation was prepared in conformance with local standards and utilizes procedures and methodologies as specified by the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA).

The evaluation of noise impacts associated with the proposed project includes: (1) reviewing existing ambient noise levels, including traffic-noise modeling in the project area; (2) determining the noise impacts associated with site development; (3) determining the long-term noise impacts from project-related traffic, and (4) determining the long-term noise impacts from on-site activity noise at off-site residences and other sensitive receptors.

The generation of noise associated with the implementation of the proposed project would occur in the short-term with construction activities and over the long-term from the on-site operation of transportation-related noise sources associated with the proposed development. This noise assessment addresses noise impacts by discussing the current noise environment, analyzing impacts associated with the proposed land use, and evaluating construction equipment noise.

The FHWA's Traffic Noise Model (Version 2.5) was used to evaluate traffic-related noise conditions in the general project area. This model requires various parameter (e.g., traffic volumes, vehicle mix, vehicle speed, and roadway geometry) to compute typical equivalent noise levels during daytime, evening, and nighttime hours. The resultant noise levels are weighted and summed over 24-hour periods to determine the Community Noise Equivalent Level (CNEL) values. CNEL contours are derived through a series of calculations to determine the 60, 65, and 70 dBA CNEL contours associated with traffic noise generated on the adjacent road.

2.0 PROJECT DESCRIPTION

The project analyzed herein constitutes the project described in the Initial Study. As indicated therein, three alternative site plans have been submitted for review and consideration by the City. All three site plans orientated loading dock activities toward the west and away from the single-family residences (located along the west side of Morada Street) and Our Lady of Guadalupe Mission Church (located at the northwesterly corner of Arrow Highway and Morada Street) to the east of the project site. All design options seek to effectively utilize building orientation in a manner to minimize noise intrusion, effectively utilizing the structure(s) and the building massing as sound walls.

Of the three site plans under consideration, the "1-building site plan" incorporates a travel aisle and parking area directly adjacent to the project site's eastern boundary. That configuration exposes sensitive receptors to the east of the project site to the greatest potential noise exposure and was selected as the "worst-case" scenario for focused consideration herein. Other development alternatives would potentially result in lesser project-related noise exposure and might, therefore, necessitate less mitigation. The analyzed site plan is included as Figure N-1 (Arrow Highway Business Park – One-Building Site Plan).

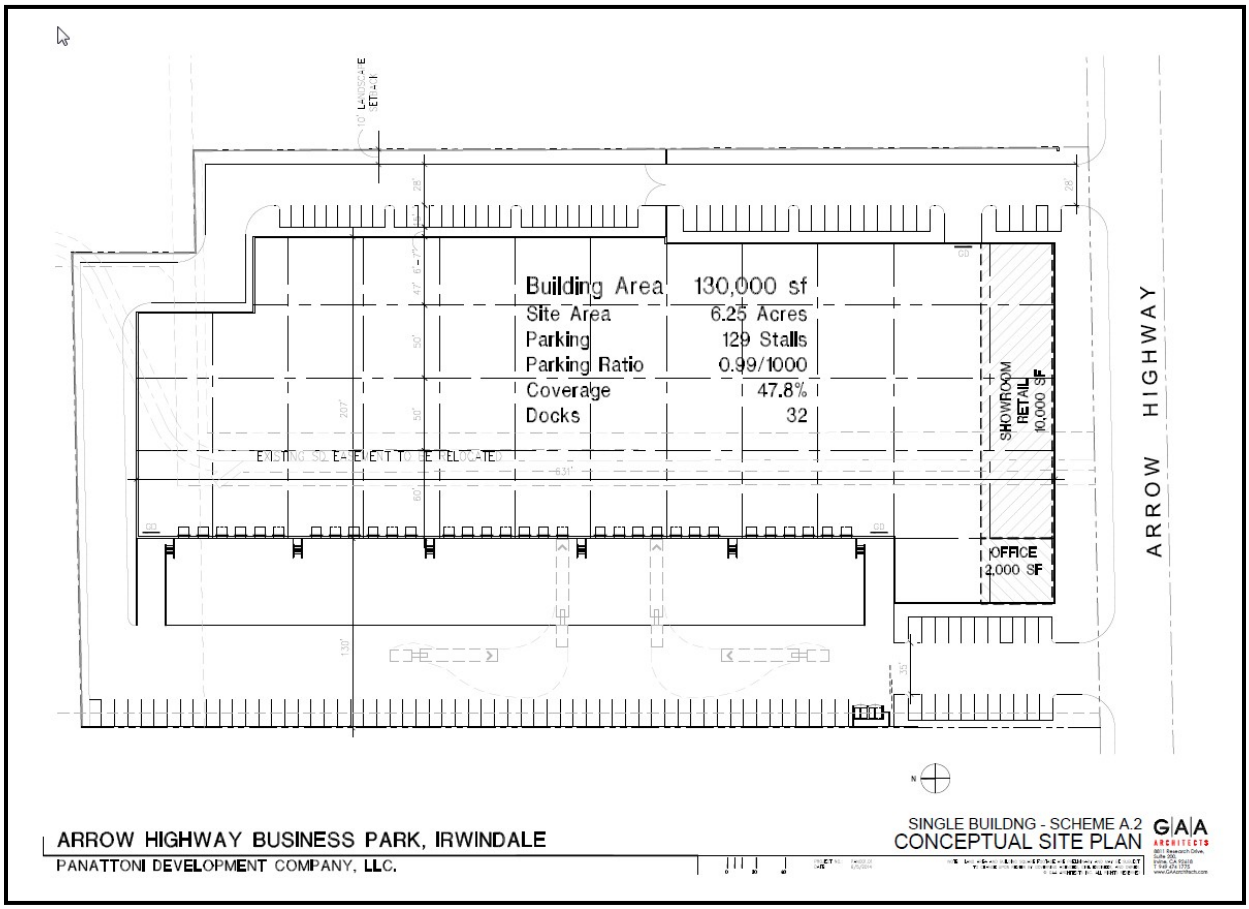

Figure N-1
ARROW HIGHWAY BUSINESS PARK
ONE-BUILDING SITE PLAN
Source: Shubin-Madal Realty Investors, LLC

3.0 EXISTING CONDITIONS

3.1 Noise Definitions

Sound is a pressure wave transmitted through the air. It is described in terms of loudness or amplitude (measured in decibels), frequency or pitch (measured in Hertz [Hz] or cycles per second), and duration (measured in seconds or minutes). The standard unit of measurement of the loudness of sound is the decibel (dB). Typical human hearing can detect changes in sound levels of approximately 3 dBA under normal conditions. Changes of 1 to 3 dBA are detectable under quiet, controlled conditions, and changes of less than 1 dBA are usually indiscernible. A change of 5 dBA is discernable to most people in an exterior environment while a change of 10 dBA is perceived as a doubling (or halving) of the noise.

The human ear is not equally sensitive to all frequencies. Sound waves below 16 Hz are not heard at all and are “felt” more as a vibration. Similarly, while people with extremely sensitive hearing can hear sounds as high as 20,000 Hz, most people cannot hear above 15,000 Hz. In all cases, hearing acuity falls off rapidly above about 10,000 Hz and below about 200 Hz. Since the human ear is not equally sensitive to sound at all frequencies, a special frequency dependent rating scale is usually

used to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear.

Noise is defined as unwanted sound and is known to have several adverse effects on people, including hearing loss, speech and sleep interference, physiological responses, and annoyance. Based on these known adverse effects of noise, the federal government, the State of California (State), and many local governments have established criteria to protect public health and safety and to prevent disruption of certain human activities.

3.2 Noise Measurement Scales

Several rating scales (or noise "metrics") exist to analyze adverse effects of noise, including traffic-generated noise, on a community. These scales include the equivalent noise level (Leq), the community noise equivalent level (CNEL), and the day-night noise level (Ldn). Leq is a measurement of the sound energy level averaged over a specified time period (usually 1 hour). Leq represents the amount of variable sound energy received by a receptor over a time interval in a single numerical value. For example, a 1-hour Leq noise level measurement represents the average amount of acoustic energy that occurred in that hour.

Unlike the Leq metric, the CNEL noise metric is based on 24 hours of measurement. CNEL also differs from Leq in that it applies a time-weighted factor designed to emphasize noise events that occur during the evening and nighttime hours (when quiet time and sleep disturbance is of particular concern). Noise occurring during the daytime period (7:00 AM to 7:00 PM.) receives no penalty. Noise produced during the evening time period (7:00 PM to 10:00 PM) is penalized by 5 dBA, while nighttime (10:00 PM to 7:00 AM) noise is penalized by 10 dBA.

The Ldn noise metric is similar to the CNEL metric except that the period from 7:00 PM to 10:00 PM receives no penalty. Both the CNEL and Ldn metrics yield approximately the same 24-hour value (within about 0.5 dBA) with the CNEL being the more restrictive (i.e., its calculation results in the higher value of the two).

3.3 Vibration Fundamentals

Vibration is a trembling, quivering, or oscillating motion of the earth. Like noise, vibration is transmitted in waves, but in this case through the earth or solid objects. Unlike noise, vibration is typically of a frequency that is felt rather than heard.

Vibration can be either natural as in the form of earthquakes, volcanic eruptions, sea waves, landslides, etc., or man-made as from explosions, the action of heavy machinery or heavy vehicles such as trucks or trains. Both natural and man-made vibration may be continuous such as from operating machinery, or transient as from an explosion.

As with noise, vibration can be described by both its amplitude and frequency. Amplitude may be characterized in three ways including displacement, velocity, and acceleration. Particle displacement is a measure of the distance that a vibrated particle travels from its original position and for the purposes of soil displacement is typically measured in inches or millimeters. Particle velocity is the rate of speed at which soil particles move in inches per second or millimeters per second. Particle acceleration is the rate of change in velocity with respect to time and is measured in inches per second per second or millimeters per second per second. Typically, particle velocity

(measured in inches or millimeters per second) and/or acceleration (measured in gravities) are used to describe vibration. Table N-1 (Human Reaction to Typical Vibration Levels) presents the human reaction and effects on buildings exposed to various levels of continuous vibration.

Table N-1
HUMAN REACTION TO TYPICAL VIBRATION LEVELS

Vibration Level Peak Particle Velocity (inches/second)	**Human Reaction**	**Effect on Buildings**
0.006 - 0.019	Threshold of perception Possibility of intrusion	Unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level of vibration to which ruins and ancient monuments should be subjected
0.10	Continuous vibration annoy people	Virtually no risk of "architectural" damage to normal buildings
0.20	Annoying to people in buildings	Threshold of risk to "architectural" damage to normal dwelling
0.4 – 0.6	Considered unpleasant by people subjected to continuous vibrations Unacceptable to some people	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage

Source: California Department of Transportation

Vibrations also vary in frequency and this affects perception. Typical construction vibrations fall in the 10 to 30 Hz range and usually occur around 15 Hz. Traffic vibrations exhibit a similar range of frequencies. Due to their suspension systems, municipal buses often generate frequencies around 3 Hz at high vehicle speeds. It is more uncommon, but possible, to measure traffic frequencies above 30 Hz.

The way in which vibration is transmitted through the earth is called propagation. Propagation of earth borne vibrations is complicated and difficult to predict because of the endless variations in the soil through which waves travel. There are three main types of vibration propagation; surface, compression, and shear waves. Surface waves, or Rayleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water. P-waves, or compression waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a "push-pull" fashion). P-waves are analogous to airborne sound waves. S-waves, or shear waves, are also body waves that carry energy along an expanding spherical wave front. Unlike P-waves, however, the particle motion is transverse or "side-to-side and perpendicular to the direction of propagation."

As vibration waves propagate from a source, the energy is spread over an ever-increasing area such that the energy level striking a given point is reduced with the distance from the energy source. This geometric spreading loss is inversely proportional to the square of the distance. Wave energy is also reduced with distance as a result of material damping in the form of internal friction, soil layering, and void spaces. The amount of attenuation provided by material damping varies with soil type and condition as well as the frequency of the wave.

3.4 Regulatory Background

To limit population exposure to physically and/or psychologically damaging, as well as intrusive noise levels, the federal government, the State, various county governments, and most municipalities in the State have established standards and ordinances to control noise. Applicable noise-related regulations are briefly described below.

Federal Government

- **Occupational Health and Safety Administration**. The federal government regulates occupational noise exposure common in the workplace through the Occupational Health and Safety Administration (OSHA) under the United States Environmental Protection Agency (USEPA). Noise exposure of this type is dependent on work conditions and is addressed through a facility's "Health and Safety Plan."

  The construction of the proposed project will be subject to these OSHA limitations and all workers would receive appropriate training, hearing protection, and breaks, accordingly, ensuring that they are not exposed to harmful noise levels. Similarly, once operational, noise in the workplace would be subject to OSHA limitations.

- **United States Department of Housing and Urban Development**. The United States Department of Housing and Urban Development (HUD) has set a goal of 45 dBA Ldn as a desirable maximum interior standard for residential units developed under HUD funding. This level is also generally accepted within the State. While HUD does not specify acceptable exterior noise levels, standard construction of residential dwellings constructed under Title 24 standards typically provide 20 dBA of attenuation with the windows closed. Based on this premise, in order to achieve HUD's maximum interior standard for residential areas, the exterior Ldn should not exceed 65 dBA.

State of California

The California Office of Noise Control has set acceptable noise limits for sensitive uses. Sensitive-type land uses, such as homes and schools, are "normally acceptable" in exterior noise environments up to 65 dBA CNEL and "conditionally acceptable" in areas up to 70 dBA CNEL. A "conditionally acceptable" designation implies that new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements for each land-use type is made and needed noise insulation features are incorporated in the design. By comparison, a "normally acceptable" designation indicates that standard construction can occur with no special noise reduction requirements.

Applicable interior standards for new multi-family dwellings are governed by Title 24 of the California Government Code (CGC). These standards require that acoustical studies be performed prior to construction in areas that exceed 60 dBA Ldn. Such studies are required to establish measures that will limit interior noise to no more than 45 dBA Ldn and this level has been applied to many communities in California.

City of Irwindale

The "City of Irwindale 2020 General Plan Update" (General Plan) addresses noise concerns within the Safety Element's Section 6 (Noise and Land Use Compatibility). The Safety Element notes that

the City "will work to reduce the high levels of noise exposure associated with the existing development and transportation facilities in the City." The City "will strive to reduce the community's exposure to noise from on-going manufacturing activities" (Policy 4) and "will work towards reducing noise exposure in the City by considering noise and land use compatibility in land use planning" (Policy 5). Also, the City "will continue to investigate strategies that will be effective in reducing the community's exposure to harmful noise levels" (Policy 6). The Safety Element identifies the various federal and State standards and limitations outlined above.

In accordance with the Office of Noise Control's "Guidelines for the Preparation and Content of Noise Elements of General Plans," the Safety Element sets land-use compatibility based on noise exposure, thus providing a guide for compatibility of noise-sensitive land uses in areas subject to noise levels of 55 to 80 dBA CNEL or Ldn. Residential uses are normally unacceptable in areas exceeding 70 dBA CNEL; and conditionally acceptable between 55 and 70 dBA CNEL for low-density single-family dwelling units, duplexes, and mobile homes, and between 60 and 70 dBA CNEL for multiple-family units. Schools, libraries, hospitals, and nursing homes are treated as noise-sensitive land uses, requiring acoustical studies within areas exceeding 60 dBA CNEL. Commercial/professional office buildings and industrial land uses are normally unacceptable in areas exceeding 75 dB CNEL, and are conditionally acceptable within 67 to 78 dB CNEL (for commercial and professional offices only).

The goals of the Safety Element are implemented through the provisions of the "City of Irwindale Municipal Code" (Municipal Code). Section 9.28.030 (Ambient Base Noise Levels Designated) in Chapter 9.28 (Noise Regulations) sets forth exterior standards by land use. These "base levels" defined in Section 9.28.030(A) are included in Table N-2 (City of Irwindale Ambient Noise Levels).

Table N-2
CITY OF IRWINDALE AMBIENT NOISE LEVELS

Zone	Ambient Base Noise Level	
	10:00 PM – 7:00 AM	**7:00 AM – 10:00 PM**
Residential	45 dBA	50 dBA
Commercial	50 dBA	55 dBA
Industrial	60 dBA	70 dBA

Source: City of Irwindale Municipal Code

Residential land uses include an exterior noise "base level" of 50 dBA between the hours of 7:00 AM and 10:00 PM and 45 dBA between the hours of 10:00 PM and 7:00 AM. Commercial properties raise these levels to 55 dBA and 50 dBA, respectively. Industrial properties carry a standard of 70 dBA and 60 dBA for the day and night, respectively. The "base levels" represent the lowest levels to be used in the existing setting for environmental assessment, even if the actual levels are lower and, if the actual ambient levels exceed the "base levels" included in the table, the ambient levels become the "base levels." The Municipal Code notes: "Any noise at a level which exceeds the ambient or the ambient base level as set forth in subsection A of this section, whichever is greater, by more than 10 dB when measured at any boundary line of the property from which the noise emanates shall constitute sufficient proof of a violation."

Section 9.28.040 (Noise Level Violation Designated) notes: "It is unlawful for any person to wilfully make or continue, or cause to be made or continued any noise at a level which exceeds by more than five dB the ambient or the ambient base level as set forth in Section 9.28.030, whichever is greater, when measured at any boundary line of the property from which the noise emanates."

The City also sets regulations for the operation of machinery. Section 9.28.100 (Machinery, Equipment, Fans, and Air Conditioning) states: "It is unlawful for any person to operate any machinery, equipment, pump, fan, air-conditioning apparatus, or similar mechanical device in any manner so as to create any noise which would cause the noise level at any boundary line of any property from which such noise emanates to exceed the ambient noise level or the ambient base level as set forth in Section 9.28.030, whichever is greater, by more than ten decibels; provided, however, this section shall not prevent the reasonable operation of customary household gardening equipment or hobby shop equipment during the hours of eight AM to nine PM, Monday through Saturday, and ten AM to eight PM on Sunday, provided the same may not exceed eighty decibels (as measured from the adjacent property line) for more than three hours from sunup to sundown."

The City recognizes construction is necessary but can present a nuisance value to sensitive receptors if performed in their proximity and sets limitations accordingly. In Section 9.28.110 (Construction of Building and Projects - Times Specified), Subsection A, notes: "It is unlawful for any person within a residential zone, or within a radius of five hundred feet therefrom, to operate equipment or perform any outside construction or repair work on buildings, structures, or projects or to operate any pile driver, steam shovel, pneumatic hammer, derrick, steam or electric hoist or other construction type device on a development requiring a city permit, in such a manner that noise is produced which would constitute a violation of Section 9.28.040, unless beforehand authorization therefor has been duly obtained from the building inspector. Such activity is unlawful without a permit during all hours on Sunday. No permit shall be required to perform emergency work as defined in subsection E of 9.28.020." Subsection B goes on to define allowable times as being limited to 7:00 AM to 7:00 PM.

3.5 Existing Noise Environment

Field Measurements

The project site is located within the City along the north side of Arrow Highway, between Irwindale Avenue to the west and Morada Street to the east. The parcel includes various dilapidated structure that would be removed through demolition. The project constitutes an industrial use and is, therefore, not noise sensitive in nature. The project areas to the north, south, and west also consist of industrial and are not themselves sensitive by nature.

The nearest residential uses are located along the eastern site perimeter along the west side of Morada Street. Our Lady of Guadalupe Mission Church is also located along the west side of Morada Street and borders the project site.

A field survey was conducted on August 6, 2014 (Wednesday) to determine ambient noise levels in the project area. As illustrated in Figure N-2 (Noise Monitoring Locations), the study included two noise readings.[1] One reading (Noise Reading N-1) was obtained on the project site at the eastern fence line in the Arrow Automotive (15233 Arrow Highway, Irwindale) (now vacant) parking area.

[1]/ Noise monitoring was conducted using a Quest Technologies Model 2900 Type 2 Integrating/logging Sound Level Meter. The unit meets the American National Standards Institute Standard S1.4-1983 for Type 2, International Electrotechnical Commission Standard 651-1979 for Type 2, and International Electro-technical Commission Standard 651-1979 for Type 2 sound level meters. The unit was field calibrated using a Quest Technologies QC-10 calibrator at 11:27 AM immediately prior to the first set of readings. The calibration unit meets the requirements of the American National Standards Institute Standard S1.4-1984 and the International Electrotechnical Commission Standard 942: 1988 for Class 1 equipment. The accuracies of the meter and calibrator are maintained through a program established through the manufacturer and traceable to the National Bureau of Standards. The calibration of the meter was rechecked at 12:20 PM after the final reading and no meter "drift" was noted

The second reading (Noise Reading N-2) other was obtained over the sidewalk between the vacant lot located at 5223 Morada Street and the residential unit to the north located at 5233 Morada Street. All obtained noise level measurements are included in Table N-3 (Noise Level Measurements). The results of the field study are summarized below.

- **Noise Reading No. 1** (NR-1). This reading was taken along the north side of Arrow Highway at the eastern fence line in the Arrow Automotive parking area. The meter was placed at a distance of 50 feet from the centerline of travel (grease stain) for the near, westbound lane. The 15-minute measurement began it 11:30 AM. Traffic along Arrow Highway included 136 automobiles, 4 medium trucks, and 11 heavy trucks going eastbound and 137 automobiles, 5 medium trucks, and 3 heavy trucks proceeding westbound. The road is posted at 45 miles per hour (mph). Other observed noise sources included overflying aircraft.

- **Noise Reading No. 2** (NR-2). This reading was taken to the east of the project site along the west side of Morada Street over the sidewalk between the vacant lot located at 5223 and the residential unit to the north located at 5233 Morada Street. The 15-minute reading started at 12:01 PM. The dominant source of noise was from traffic along the Arrow Highway. Other observed noise sources included two vehicles traveling along Morada Street, dogs, and roosters.

Modeling of Observed Field Data

Noise from motor vehicles is generated by engine vibrations, the interaction between the tires and the road, and the exhaust system. Reducing the average motor vehicle speed reduces the noise exposure at receptors adjacent to the road. Each 5 mph reduction lowers noise by about one dBA.

Noise from a line source, such as vehicles proceeding down a roadway, will be reduced with distance and the rate of reduction is a function of both the distance and the type of terrain over which the noise passes. Hard sites, such as developed areas with paving, reduce noise at a rate of 3 dBA per doubling of the distance while soft sites, such as undeveloped areas, open space, and vegetated areas reduce noise at a rate of 4.5 dBA per doubling of the distance. These represent the extremes and most areas will actually contain a combination of hard and soft elements with the noise reduction placed somewhere in between these two factors.

Most noise in the project area is generated by vehicles using local roadways and trains, although local sources and aircraft add to the noise profile, especially in proximity to some industrial machinery. In order to gauge the potential for project-generated impacts due to the addition of traffic, it is necessary to quantify the existing traffic-generated noise. The FHWA's Traffic Noise Model (TNM Version 2.5) was used to evaluate traffic-related noise conditions in the project vicinity. The model predicts 1-hour Leq noise levels and factors are applied to ascertain the CNEL noise levels. These latter values are used in assessing the potential for mobile-source impacts.

The TNM model uses various parameters including the traffic volume, vehicle mix, vehicle speed, and roadway geometry to compute typical equivalent (Leq) noise levels. The model is typically accurate to within about 2 dBA where traffic provides the dominant noise source. To validate/calibrate the results of the model, TNM modeling was prepared for the number of vehicles and logistics observed during reading NR-1 in the field study. In the case of NR-1, the measurement was modeled over paving as was performed in the field study. Modeling was prepared for a posted speed of 45 mph. Model results are included in Table N-4 (Noise Level Measurements Versus Predicted Model Results). Note that the field measurements show excellent correlation with the model.

Figure N-2
NOISE LEVEL MONITORING LOCATIONS
Source: GoogleEarth

Table N-3
NOISE LEVEL MEASUREMENTS[1]

Monitoring Location	Leq (dBA)	L_{02} (dBA)	L_{08} (dBA)	L_{25} (dBA)	L_{50} (dBA)	Lmin (dBA)	Lmax (dBA)
NR-1	67.9	75.4	72.5	69.2	64.2	49.2	79.9
NR-2	52.0	58.9	54.7	52.0	49.8	42.0	69.5

Notes:
1. The Leq represents the equivalent sound level and is the numeric value of a constant level that over the given period of time transmits the same amount of acoustic energy as the actual time-varying sound level. The L_{02}, L_{08}, L_{25}, and L_{50} are the levels that are exceeded 2, 8, 25, and 50 percent of the time, respectively. Alternatively, these values represent the noise level that would be exceeded for 1, 5, 15, and 30 minutes during a 1-hour period if the readings were extrapolated out to an hour's duration. The Lmin and Lmax represent the minimum and maximum root-mean-square noise levels obtained over a period of 1 second during the measurement.

Source: Environmental Impact Sciences

Table N-4
NOISE LEVEL MEASUREMENTS
VERSUS PREDICTED MODEL RESULTS[1]

Monitoring Location	Measured Leq (dBA)	Modeled Leq (dBA)	Difference (dBA)
NR-1	67.9	68.1	0.2

Notes:
1. Based on a posted speed of 45 mph.

Source: Environmental Impact Sciences

Modeling of Existing Traffic Volumes

Existing traffic volumes are modeled to determine if the project would add enough vehicles to significantly raise the noise level along the local roadways. In this case the impact is based solely on the addition of vehicles and the additional noise they create, regardless of the surrounding terrain.

The average daily traffic (ADT) volume for Arrow Highway is based on data obtained included in the transportation analysis prepared by Sasaki Transportation Services, Inc. These counts show a value of 26,266 ADT between Irwindale Avenue to the west, and Vincent Avenue to the east. Additionally, a value of 33,866 ADT was obtained between Azusa Canyon Road and Irwindale Avenue, to the west of the project site.

On average, as projected by the CARB EMFAC2007 computer model, traffic in Los Angeles County (County) includes 92.49 percent automobiles, 4.74 percent medium trucks, and 2.77 percent heavy trucks; however, this represents the daily average and the ratio changes by the hour. Reflecting the industrial nature of the project area, the ratio of heavy trucks observed in the field study is considerably higher than that for the County in general. During noise reading NR-1, obtained during the 11:00 AM hour, 273 automobiles (92.23 percent), nine medium trucks, (3.04 percent), and 14 heavy trucks, (4.73 percent) were observed. The EMFAC2007 model indicates that for Los Angeles County overall, the 11:00 AM hour includes 91.10 percent automobiles, 6.04 percent medium trucks, and 2.86 percent heavy trucks. While the overall ratio includes slightly fewer automobiles and more medium trucks, it contains fewer heavy trucks and these are considerably noisier than automobiles and medium trucks.

The EMFAC model further breaks this traffic down by the hour of the day thereby allowing for a determination of an overall CNEL value for the ADT. These County ratios by time period are included in Table N-5 (Comparison of Noted and Modeled Vehicle Ratios for Various Times of the Day). Because a significant impact would be based on the project's ability to increase the existing noise, a reasonable worst case would use the existing County ratios for the existing setting, then to add the project-generated truck and auto traffic to those levels. As such, the EMFAC's County ratios were used in the analysis if the existing setting.

With respect to traffic-derived noise impacts, an impact may be significant if the project's addition to the existing traffic would create a substantial increase in noise. Therefore, if it can be demonstrated that the roadway the receives the greatest contribution of project-generated traffic relative to its existing traffic volume is not subject to a significant increase, then the contribution to all other roadways, which is relatively smaller, would not be significant either, and it is not necessary to model all of the roads in the project vicinity to determine the significance of the impact.

Table N-5
COMPARISON OF NOTED AND MODELED VEHICLE RATIOS FOR VARIOUS TIMES OF THE DAY[1]

Source	Time	Number of Vehicles	Automobiles (percent)	Medium Trucks (percent)	Heavy Trucks (percent)
Field Study (NR-1)	11:00 AM Hour	296	92.23	3.04	4.73
EMFAC2007	11:00 AM Hour	13,432	91.10	6.04	2.86
EMFAC2007	7:00 A.M – 7:00 PM	175,434	93.27	4.76	1.97
EMFAC2007	7:00 PM – 10:00 PM	24,341	95.14	2.99	1.87
EMFAC2007	10:00 PM – 7:00 AM	27,544	85.22	7.35	7.43
EMFAC2007	7:00 AM – 7:00 AM	227,319	92.50	4.88	2.62

Notes:
1. The number of vehicles for Field Studies is based on the actual number of vehicles counted. The number of vehicles for the EMFAC2007 model is based on thousands of vehicle miles traveled per day in the County.

Source: Environmental Impact Sciences

Vehicle counts obtained on July 9, 2014 shows a value of 26,266 ADT along Arrow Highway between Vincent Avenue, to the east of the project site, and Irwindale Avenue to the west of the site. Additionally, a value of 33,866 ADT was obtained between Irwindale and Azusa Canyon Road, further to the west. The transportation analysis indicates that most of the project's traffic would to be to the west of the site. Because the project traffic would be greatest at the site entrance along Arrow Highway, and the traffic to the west of the site shows higher existing counts than those at the site, the impact would be greatest for that portion of Arrow Highway at the site entrance and it is not necessary to model the traffic along other roads.

Arrow Highway currently operates at 26,266 ADT. The area is industrial and modeling was conducted for paved surfaces. Table N-6 (Existing Noise Levels along Arrow Highway) includes the CNEL as modeled at a distance of 50 feet, as well as the existing distances to the 70, 65, and 60 dBA CNEL noise levels as measured from the centerline of travel.

Table 6
EXISTING NOISE LEVELS ALONG ARROW HIGWAY

Location	Existing ADT	Existing CNEL (dBA @ 50 Feet)	Distance to 70 CNEL (feet)	Distance to 65 CNEL (feet)	Distance to 60 CNEL (feet)
Arrow Highway at Site	26,266	73.6	115	363	1,148

Source: Environmental Impact Sciences

3.6 Sensitive Receptors

Some land uses are considered more sensitive to noise than others due to the types of population groups or activities involved. Sensitive receptors include residential areas and other sensitive land uses including any private or public school, hospital, residential-care facility for the elderly, and religious institutions.

The project is an industrial use and is not noise sensitive in nature. The nearest sensitive uses are the existing residential units and Our Lady of Guadalupe Mission Church located along the west side of Morada Street, north of Arrow Highway.

4.0 THRESHOLDS OF SIGNIFICANCE

The City follows the State guidelines for land use compatibility referencing the Office of Noise Control's "Guidelines for the Preparation and Content of Noise Elements of General Plans." Residential uses are normally unacceptable in areas exceeding 70 dBA CNEL; and conditionally acceptable between 55 and 70 dBA CNEL for low-density single-family dwelling units, duplexes, and mobile homes. Commercial and professional office buildings and industrial land uses are normally unacceptable in areas exceeding 75 dB CNEL, and are conditionally acceptable within 67 to 78 dB CNEL (for commercial and professional offices only).

Additionally, the City's stationary noise standards siting criteria note that industrial land uses are compatible to exterior noise levels of 70 dBA CNEL during the day and 60 dBA at night. Residential land uses are compatible with noise levels of up to 50 dBA during the day and 45 dBA at night. These standards only apply to stationary sources of noise under City control and do not include those sources beyond City control, such as motor vehicles while operating on public roadways.

With respect to projected increases, noise impacts can be broken down into three categories. The first is "audible" impacts, which refers to increases in noise level that are perceptible to humans. Audible increases in noise levels generally refer to a change of 3 dBA or more since this level has been found to be barely perceptible in exterior environments. The second category, "potentially audible," refers to a change in noise level between 1 and 3 dBA. This range of noise levels was found to be noticeable to sensitive people in laboratory environments. The last category includes changes in noise level of less than 1 dBA that are typically "inaudible" to the human ear except under quiet conditions in controlled environments. Only "audible" changes in noise levels at sensitive receptor locations (i.e., 3 dBA or more) are considered potentially significant.

4.1 State CEQA Guidelines

In order to assist in determining whether a project will have a significant effect on the environment, the State CEQA Guidelines identify criteria that may be deemed to constitute a substantial or potentially substantial adverse change in physical conditions. According to the State CEQA Guidelines (Appendix G), a project will normally have a significant adverse environmental impact on noise if any of the following apply:

- Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
- Would the project result in exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?
- Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?
- Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

- For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

5.0 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

The generation of noise associated with the proposed project would occur over the short-term for site construction activities. In addition, noise would result from the long-term operation of the project. Both short-term (construction) and long-term (operational) noise impacts associated with the project are examined in this analysis. For ease of reference, the analysis follows the outline presented in the State CEQA Guidelines (Appendix G).

5.1 Exposure of Persons to or Generation of Noise Levels in Excess of Standards Established in the Local General Plan or Noise Ordinance or Applicable Standards of Other Agencies

On-Site Impacts

- **Less than Significant Impact**. An impact could be significant if the project would site a sensitive land use in a location where noise levels would exceed the appropriate standards. The City's Noise Element references the State guidelines and sets a goal level of up to 75 dBA CNEL as "normally acceptable" and up to 80 dBA CNEL as "conditionally acceptable" for the proposed industrial land use.

  Traffic noise modeling for Arrow Highway shows an existing CNEL of 73.6 dBA as measured at a distance of 50 feet from the centerline of travel. The project is located beyond the 75 dBA CNEL that falls within the roadway easement and the land use is "normally acceptable" with the existing setting. Noise measurements obtained on August 6, 2014 (Wednesday) show on-site noise levels never approached the maximum "normally acceptable" levels for an industrial area and, in that respect, the project is not subject to significant impact.

On-Site Workers

- **Less than Significant Impact**. Workers involved with the proposed project will be subject to augmented noise levels due to their working in proximity to both heavy equipment and trucks. Noise in the work place is regulated by OSHA. Article 105 (Control of Noise Exposure) sets limitations on worker exposure. Specifically, an employer must administer a continuing, effective hearing conservation program whenever employee noise exposures equal or exceed an eight-hour time-weighted average sound level of 85 dBA. Furthermore, workers cannot be exposed to noise levels in excess of 90 dBA Leq for a period in excess of 8 hours. Higher noise levels carry shorter allowable duration periods. In no case may workers be exposed to peak noise levels in excess of 140 dB. OSHA also specifies a hearing conservation program, the use of hearing protectors, a training program and record keeping requirements for any workers exposed to prolonged periods of excessive noise. Required compliance with OSHA regulations will ensure that worker exposure to excessive noise remains less than significant.

Off-Site Impacts

- **Less than Significant with Mitigation**. Stationary source impacts include noise generated from on-site equipment and, for the purposes of this analysis, trucking operations while within the confines of the subject parcel. These sources have the potential to create noise impacts on the adjoining community.

  As noted above, residential units are located to the east, with the nearest structures on the order of 10 feet from the site boundary. With respect to the residences, an impact could be significant if project-related stationary noise would exceed the City's standards of 50 dBA between the hours of 7:00 AM and 10:00 PM or 45 dBA by 5 dBA between the hours of 10:00 PM and 7:00 AM

  The primary source of noise from site operations would be from trucks idling while engaged in unloading activities. On-site air conditioning units and similar appurtenant equipment attached to the structure also produces noise; however, City statute (Section 17.52.020, Municipal Code) requires that this equipment be obscured, both visually and acoustically. As a result of that shielding, no significant impacts would result from the use of that equipment.

  Motor vehicles are subject to regulation under the California Vehicle Code (CVC) and are, therefore, exempt from City and County codes when operating on public roadway. If the ordinance is, however, deemed to be only applicable to vehicles when under operation on public roads, on-site trucks could be considered as a stationary noise source subject to the noise regulation limitation of 5 dBA over a level of 45 dBA at night and 50 dBA during the day. Diesel trucks are prohibited from idling more than 5 minutes at any one location (http://www.arb.ca.gov/toxics/idling/regtext.htm).

  Noise measurements taken for a variety of similar projects have demonstrated that the noise produced by idling/maneuvering semi-trucks is typically on the order of 70 dBA Leq, as measured at a distance of 50 feet from the noisiest portion of the truck (i.e., to the side behind the cab and in line with the engine and exhaust stacks). This would be inclusive of those noises commonly associated with idling (e.g., release of air brakes, engine run-ups, couplers).

  Truck operations while maneuvering in the loading bay area could generate noise discernable to the residents located along Morada Street. The transportation analysis assumes that the project would generate as many as 250 truck trips on a daily basis. Assuming that 250 trucks are spread over a 24 hour period, approximately 10.4 trucks would call on the facility on an hourly basis (including both arrivals and departures). If each truck arriving and departing were to spend 5 minutes idling and 3 minutes in maneuvering, 2.8 trucks would be in operation at any given time (i.e., [250 trucks/day / 24 hour/day] x [16 minutes/truck /60 minutes/hour] = 2.8 trucks). Assuming that each truck produces a Leq of 70 dBA (as measured at a distance of 50 feet), the composite hourly Leq noise is calculated at 74.5 dBA. The 50 dBA Leq falls at a distance of about 840 feet from this activity while the 45 dBA level is at about 1,860 feet.

  The near residential structures located along Morada Street are on the order of 10 feet from the site perimeter. The site plans calls for 10 feet of landscaping, thus placing the center of the near lane at about 25 feet from the near structures. Based on this distance, and assuming 2.8 trucks are operating simultaneously at any given moment, with a clear line of view, noise at the residents is calculated at 80.5 dBA Leq.

The three conceptual site plans show that all trucking and loading bay activity are to be located on the west side of the facility, thereby pushing these activities back approximately 300 feet from the residents located along Morada Street. At a distance of about 325 feet, noise from trucking operations is projected at 58.8 dBA Leq, assuming a clear line of sight to these activities.

The physical presence of the structure would serve as an effective sound wall and could further reduce this noise by as much as 20 dBA, the maximum attributable to a wall. This would reduce the noise at the residences to less than both the 50 dBA daytime standard and the 45 dBA nighttime standard. Noise generated on the west side of the structure would, therefore, not be significant at the residences to the east of the project site.

If the trucks are allowed to circulate around the facility, those trucks would then pass those same residences and Our Lady of Guadalupe Mission Church at a distance of only about 25 feet. In this case, the noise would last for no more than about 15 seconds as the trucks pass while entering or existing the facility. Using a value of 70 dBA as measured at a distance of 50 feet, the resultant noise is calculated at 76.0 dBA at the nearest residences and, while this level is momentary, it exceeds, by more 10 dBA, both the daytime and nighttime "base levels" and could present a significant impact at the neighboring sensitive uses. Mitigation is, therefore, warranted.

Mitigation

- Option No. 1. No truck traffic shall be allowed on the east side of the facility, signage to that effect shall be posted on the project site, and site operators shall enforce that restriction; or
- Option No. 2. The Applicant shall construct a sound wall along the eastern perimeter with a height of no less than 12 feet and no truck traffic shall be allowed along the east side of the structure between the hours of 10:00 PM and 7:00 AM.

Residual Impact

Operations along the west side of the structure would not be expected to result in a significant impact and the restriction of trucks to this side of the structure (or an ingress/egress plan that keeps all trucking on the west side of the structure) would reduce any significant impact to less than significant. Alternatively, modeling indicates that if a 12-foot high wall is placed along the eastern perimeter, it would provide over 17 dBA (and as much as 18.6 dBA) of attenuation for the passing trucks. The instantaneous projected level of 76.0 dBA would be reduced to no more than 59 dBA at the residences.

Residential land uses include an exterior noise "base level" of 50 dBA between the hours of 7:00 AM and 10:00 PM and 45 dBA between the hours of 10:00 PM and 7:00 AM. For momentary noise, City standards define compliance as achievement of the City's 50 dBA daytime and 45 dBA nighttime "base levels," plus 10 dBA. The resultant level is less than 10 dBA above the 50 dBA daytime (50 + 10 = 60) but in excess of the 10 dBA above the 45 dBA nighttime standard (45 + 10 = 55). The restriction that trucks not use the east side of the structure between the hours of 10:00 PM and 7:00 AM would then satisfy the 45 dBA nighttime standards reducing the impact to a less-than-significant level.

5.2 Exposure of Persons to or Generation of Excessive Ground-Borne Vibration or Ground-Borne Noise Levels

- **Less than Significant Impact**. The City does not set quantitative standards for vibration impact. With respect to construction, Caltrans notes that ground-borne vibration is typically associated with blasting operations, the use of pile drivers, and large-scale demolition activities, none of which are anticipated for the construction or operation of the proposed project.

  Some vibration could be produced due to truck bounce at the various railroad grade crossings located in the general project vicinity. No residents are, however, located in the immediate proximity to these crossings and any potential impacts of the project on off-site receptors would, therefore, be less than significant.

5.3 Substantial Permanent Increase in Ambient Noise Levels in the Project Vicinity above Levels Existing Without the Project

Road Noise

- **Less than Significant Impact**. Long-term impacts could be significant if the project creates activity or generates a volume of traffic that would substantially raise the ambient noise levels. A substantial increase is defined as 3 dBA CNEL.

  In accordance with the transportation analysis, the project would generate 750 ADT of which 250 are assumed to be trucks. Arrow Highway currently operates at 26,266 ADT. Based on a right-in and right-out access configuration, all of the project-generated traffic then uses Arrow Highway such that the project would contribute the 750 ADT directly to the existing volume along this route. The existing 73.6 dBA CNEL would be elevated to 74.1 dBA CNEL for an increase of 0.5 dBA CNEL as measured at a distance of 50 feet from the centerline of travel. The actual increase would be less because the analysis assumes the existing traffic is based on the County's overall vehicle mix and includes fewer heavy trucks to automobiles than were observed in the field study. Even under these conditions, the increase is less than the 3-dBA threshold for a significant increase and the impact is less than significant.

Stationary Source Noise

- **Less than Significant with Mitigation**. The momentary noise generated by the passing trucks along the east side of the facility is estimated at 76.0 dBA during any given hour during the day at the nearest residences. This level would be noted for no more than about 15 seconds at a time for 2.8 trucks per hour, producing an hourly Leq of 56.7 dBA (i.e., 10 log ([2.8 truck/hour x 0.25 minutes/truck / 60 minutes/hour] x ($10^{(76.0/10)}$)). The CNEL then calculates to 64.4 dBA (i.e., 10 log [(12 x $10^{(56.7/10)}$) + (3 x $10^{((56.7+5)/10)}$) + (9 x $10^{((56.7+10)/10)}$)] / 24). The calculated CNEL using the City's base ambient noise levels is 53.2 dBA (i.e., 10 log [(12 x $10^{(50/10)}$) + (3 x $10^{((50+5)/10)}$) + (9 x $10^{((45+10/10))}$)] / 24)). The actual ambient CNEL could be greater than this.

  The addition of 64.4 dBA CNEL to the base ambient 53.2 dBA CNEL gives a composite of 64.7 dBA CNEL for an addition of 11.5 dBA CNEL (i.e., 64.7 dBA CNEL – 53.2 dBA CNEL). The increase is above the 3 dBA threshold, (as well as the City standard of 5 dBA above the

ambient level) and the impact is potentially significant. The actual increase in CNEL would be less if the actual ambient noise levels are greater than the assumed “base levels”.

Mitigation

- Mitigation is as presented above.

Residual Impact

The restriction of trucking to the west side of the facility would extend the distance to the residences and the structure would serve as an effective sound wall. Alternatively, noise wall modeling indicates an attenuation of 17 to 18.6 dBA for trucks using the east side of the facility. Assuming 17 dBA of attenuation, the 64.4 dBA CNEL projected at the residences would be reduced to no more than 47.4 dBA CNEL. When added with the 53.2 dBA minimum ambient level, the composite is calculated at 54.2 dBA for an increase of 1 dBA CNEL. This increase is then under the 3 dBA threshold and the impact is reduced to a less-than-significant level.

5.4 Potential to Result in a Substantial Temporary or Periodic Increase in Ambient Noise Levels in the Project Vicinity above Levels Existing Without the Project

- **Less than Significant Impact**. Two types of noise impacts could occur during the construction phase. First, the transport of workers and equipment to the construction site would incrementally increase noise levels along site access roadways. Any increase in noise would, however, be less than 1 dBA when averaged over a 24-hour period, and would therefore have a less than significant impact on noise receptors along the truck routes.

  The second type of impact is related to noise generated by on-site construction operations and existing local residents would be subject to elevated noise levels due to the operation of on-site construction equipment. Construction activities are typically carried out in discrete steps, each of which has its own mix of equipment, and consequently its own noise characteristics. These various sequential phases would change the character of the noise levels surrounding the construction site as work progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow noise ranges to be categorized by work phase. Table N-7 (Noise Generated by Typical Construction Equipment) lists typical construction equipment noise levels recommended for noise impact assessment at a distance of 50 feet.

  Noise ranges have been found to be similar during all phases of construction, although the actual construction of the structures tends to be somewhat less than that from grading. The grading and site preparation phase tends to create the highest noise levels, because the noisiest construction equipment is found in the earthmoving equipment category. This category includes excavating machinery (e.g., backfillers, bulldozers, draglines, and front loaders) and earthmoving and compacting equipment (e.g., compactors, scrapers, and graders). Typical operating cycles may involve 1-2 minutes of full power operation followed by 3-4 minutes at lower power settings. Noise levels at 50 feet from earthmoving equipment range from 73 to 96 dBA while Leq noise levels range up to about 89 dBA. The later construction of structures is somewhat reduced from this value because the physical presence of the structure breaks up line-of-sight noise propagation.

Table N-7
NOISE LEVELS GENERATED BY TYPICAL CONSTRUCTION EQUIPMENT

Type of Equipment	**Average Sound Levels Measured** (dBA at 50 feet)
Pile Drivers	101
Rock Drills	98
Jack Hammers	88
Pneumatic Tools	85
Pumps	76
Dozers	80
Front-End Loaders	79
Hydraulic Backhoe	85
Hydraulic Excavators	82
Graders	85
Air Compressors	81
Trucks	91

Source: United States Environmental Protection Agency

Composite construction noise is best characterized by Bolt, Beranek, and Newman (USEPA December 31, 1971). Construction noise for earthwork and finish-work related to industrial development is presented as 89 dBA Leq when measured at a distance of 50 feet from the construction effort. This value takes into account both the number of pieces and spacing of the heavy equipment used in the construction effort. Noise levels are typically reduced from this value and the physical structures further break up line of sight noise. As a worst-case scenario, the 89-dBA-value is used to assess the impact of construction.

The operation of such equipment would result in the generation of both steady and episodic noise significantly above the ambient levels currently experienced near the project site. The noise produced from construction decreases at a rate of approximately 6 dBA per doubling of distance. At 100 feet, the noise levels would, therefore, be about 6 dBA less (83 dBA Leq). Similarly, at 200 feet, the noise levels would be 12 dBA less (77 dBA Leq).

The project is to be placed in an industrial area but there are proximate residential and other non-sensitive land uses (Our Lady of Guadalupe Mission Church). Most construction would be over a few hundred feet away from existing sensitive receptors. The nearest homes are, however, on the order of 10 feet from the site boundary and nearby construction activities could produce noise levels of over 90 dBA Leq at those receptors. These levels would only occur when construction is performed near the proximate site boundary/structure on a worst-case workday. The other phases of construction would generate lower noise levels and are located further from the adjacent sensitive receptors.

The City recognizes that the control of construction noise is difficult at best and provides exemption for this type of noise when the work is performed within 500 feet of a residential zone within the hours specified within the Municipal Code (i.e., 7:00 AM to 7:00 PM for permitted construction). Compliance with the Municipal Code is mandatory and as such, does not constitute mitigation under CEQA.

Mitigation

Under CEQA, no mitigation is required unless the resulting impact is deemed to be significant or potentially significant. Herein, the proposed project fully complies with the provisions of the Municipal Code; however, since neither the Municipal Code nor the General Plan include express provisions relating to construction-related noise impacts, the following mitigation measure in recommended in order to reduce the nuisance effect of construction to the maximum extent feasible:

- In order to reduce construction noise impacts to the maximum extent feasible, the following actions shall be taken during the project's construction:
  (1) The construction contractor shall schedule all construction activities, deliveries, and haul trucks during the daytime hours of 7:00 AM to 7:00 PM Monday through Saturday;
  (2) All construction equipment shall be properly maintained and tuned to minimize noise;
  (3) All equipment shall be fitted with properly operating mufflers and air intake silencers no less efficient than those originally installed by the manufacturer;
  (4) All stationary noise sources (e.g., generators and compressors) shall be located as far from residential receptors as feasible;
  (5) Sign shall be posted on the project site, clearly visible from the public right-of-way, providing contact information (e.g., name and telephone number of the construction contractor) in the event of a noise complaint, and
  (6) Construction shall be subject to any and all additional provisions as may be set forth by the City Engineer.

Residual Impact

Implementation of these measures would ensure that construction-term impacts remain at a less-than-significant level.

5.5 Expose People Residing or Working in the Project Area to Excessive Noise Levels from a Public Airport or Public Use Airport

- **Less than Significant Impact**. The El Monte airport is located west of Santa Anita Avenue approximately 5.5 miles to the southwest. While light plane and other aircraft noise is notable in the general project area, the project is well beyond any airport's 60 dBA CNEL zone. No significant impacts would, therefore, result from the implementation of the proposed project.

5.6 Expose People Residing or Working in the Project Area to Excessive Noise Levels from a Private Airstrip

- **Less than Significant Impact**. At about 3.5 miles to the northeast, the Foothill Presbyterian Hospital Heliport in Glendora represents the nearest private use facility. No helicopter noise was observed during the field study and no significant impacts would result from the implementation of the proposed project.

6.0 REFERENCES

- Bolt, Beranek, and Newman, Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances, United States Environmental Protection Agency, December 31, 1971.
- California Air Resources Board, EMFAC2007 Emissions Model, Version. 2.3.
- California Department of Transportation, Technical Noise Supplement, October 1998.
- California Department of Transportation, Related Earthborne Vibrations, February 20, 2002.
- California Department of Transportation, Transit Noise and Vibration Impact Assessment, Final Report, April 1995.
- City of Irwindale, City of Irwindale 2020 General Plan Update, June 2008.
- City of Irwindale, City of Irwindale Municipal Code (Online), March 2013.
- Federal Highway Administration, Traffic Noise Model, Version 2.5, February 2004.
- United States Department of Housing and Urban Development, The Noise Guidebook, March 1985.

7.0 APPENDICES

Appendix A	TNM Noise Modeling for Noise Reading NR-1
Appendix B	TNM Noise Modeling for Existing Arrow Highway Traffic for Various Time Periods Using Los Angeles County Vehicle Ratios
Appendix C	TNM Modeling for Arrow Highway Traffic for Various Time Periods, with Project
Appendix D	Calculation of the CNEL for Arrow Highway Traffic
Appendix E	Sound Wall Calculations
Appendix F	CARB Idle Limit Regulations

Appendix A

TNM NOISE MODELING FOR NOISE READING NR-1

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						19-Aug-14							
						TNM 2.5							
INPUT: ROADWAYS								Average pavement type shall be used unless					
PROJECT/CONTRACT:	<Project Name?>							a State highway agency substantiates the use					
RUN:	Arrow Highway Industrial, NR-1							of a different type with the approval of FHWA					
Roadway			Points										
Name	Width		Name	No.	Coordinates (pavement)			Flow Control			Segment		
					X	Y	Z	Control	Speed	Percent	Pvmt	On	
								Device	Constraint	Vehicles	Type	Struct?	
										Affected			
	ft				ft	ft	ft		mph	%			
Eastbound	12		point2	2	750	-103.5	0				Average		
			point1	1	-750	-103.5	0						
Westbound	12		point4	4	-750	-56	0				Average		
			point3	3	750	-56	0						
					19-Aug-14								
					TNM 2.5								
INPUT: TRAFFIC FOR LA													
PROJECT/CONTRACT:	<Project Name?>												
RUN:	Arrow Highway Industrial, NR-1												
Roadway		Points											
Name		Name	No.	Segment									
				Autos		MTrucks		HTrucks		Buses		Motorcycles	
				V	S	V	S	V	S	V	S	V	S
				veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Eastbound		point2	2	544	45	12	45	44	45	4	45	0	0
		point1	1										
Westbound		point4	4	544	45	16	45	12	45	4	45	4	45
		point3	3										
						19-Aug-14							
						TNM 2.5							
INPUT: RECEIVERS													
PROJECT/CONTRACT:	<Project Name?>												
RUN:	Arrow Highway Industrial, NR-1												
Receiver													
Name	No.	#DUs	Coordinates (ground)			Height	Input Sound Levels and Criteria				Active		
			X	Y	Z	above	Existing	Impact Criteria		NR	in		
						Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.		
			ft	ft	ft	ft	dBA	dBA	dB	dB			
Receiver1	1	1	0	0	0	4.92	0	66	10	8	Y		
							19-Aug-14						
							TNM 2.5						
							Calculated with TNM 2.5						
RESULTS: SOUND LEVEL													
PROJECT/CONTRACT:		<Project Name?>											
RUN:		Arrow Highway Industrial, NR-1											
BARRIER DESIGN:		INPUT HEIGHTS						Average pavement type shall be used unless					
								a State highway agency substantiates the use					
ATMOSPHERICS:		68 deg F, 50% RH						of a different type with approval of FHWA.					
Receiver													
Name	No.	#DUs	Existing	No Barrier					With Barrier				
			LAeq1h	LAeq1h		Increase over existing		Type	Calculated	Noise Reduction			
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated	
							Sub'l Inc					minus	
												Goal	
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB	
Receiver1	1	1	0	68.1	66	68.1	10	Snd Lvl	68.1	0	8	-8	
Dwelling Units		# DUs	Noise Reduction										
			Min	Avg	Max								
			dB	dB	dB								
All Selected		1	0	0	0								
All Impacted		1	0	0	0								
All that meet NR Goal		0	0	0	0								

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Appendix B

TNM MODELING FOR EXISTING ARROW HIGHWAY TRAFFIC FOR VARIOUS TIME PERIODS USING LOS ANGELES COUNTY VEHICLE RATIOS

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Daytime						19-Aug-14							
						TNM 2.5							
INPUT: ROADWAYS								Average pavement type shall be used unless					
PROJECT/CONTRACT:	<Project Name?>							a State highway agency substantiates the use					
RUN:	Arrow Highway Industrial							of a different type with the approval of FHWA					
Roadway			Points										
Name	Width		Name	No.	Coordinates (pavement)			Flow Control			Segment		
					X	Y	Z	Control	Speed	Percent	Pvmt	On	
								Device	Constraint	Vehicles	Type	Struct?	
										Affected			
	ft				ft	ft	ft		mph	%			
Roadway1	12		point2	2	750	-50	0				Average		
			point1	1	-750	-50	0						
Daytime					19-Aug-14								
					TNM 2.5								
INPUT: TRAFFIC FOR LA													
PROJECT/CONTRACT:	<Project Name?>												
RUN:	Arrow Highway Industrial												
Roadway		Points											
Name		Name	No.	Segment									
				Autos		MTrucks		HTrucks		Buses		Motorcycles	
				V	S	V	S	V	S	V	S	V	S
				veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Roadway1		point2	2	1567	45	73	45	33	45	8	45	6	45
		point1	1										
Daytime						19-Aug-14							
						TNM 2.5							
INPUT: RECEIVERS													
PROJECT/CONTRACT:	<Project Name?>												
RUN:	Arrow Highway Industrial												
Receiver													
Name	No.	#DUs	Coordinates (ground)			Height	Input Sound Levels and Criteria				Active		
			X	Y	Z	above	Existing	Impact Criteria		NR	in		
						Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.		
			ft	ft	ft	ft	dBA	dBA	dB	dB			
Receiver1	1	1	0	0	0	4.92	0	66	10	8	Y		
Daytime							19-Aug-14						
							TNM 2.5						
							Calculated with TNM 2.5						
RESULTS: SOUND LEVEL													
PROJECT/CONTRACT:		<Project Name?>											
RUN:		Arrow Highway Industrial											
BARRIER DESIGN:		INPUT HEIGHTS						Average pavement type shall be used unless					
								a State highway agency substantiates the use					
ATMOSPHERICS:		68 deg F, 50% RH						of a different type with approval of FHWA.					
Receiver													
Name	No.	#DUs	Existing	No Barrier					With Barrier				
			LAeq1h	LAeq1h		Increase over existing		Type	Calculated	Noise Reduction			
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated	
							Sub'l Inc					minus	
												Goal	
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB	
Receiver1	1	1	0	70.9	66	70.9	10	Snd Lvl	70.9	0	8	-8	
Dwelling Units		# DUs	Noise Reduction										
			Min	Avg	Max								
			dB	dB	dB								
All Selected		1	0	0	0								
All Impacted		1	0	0	0								
All that meet NR Goal		0	0	0	0								

Evening						19-Aug-14							
						TNM 2.5							
INPUT: ROADWAYS								Average pavement type shall be used unless					
PROJECT/CONTRACT:	<Project Name?>							a State highway agency substantiates the use					
RUN:	Arrow Highway Industrial							of a different type with the approval of FHWA					
Roadway			Points										
Name	Width		Name	No.	Coordinates (pavement)			Flow Control			Segment		
					X	Y	Z	Control	Speed	Percent	Pvmt	On	
								Device	Constrain	Vehicles	Type	Struct?	
										Affected			
	ft				ft	ft	ft		mph	%			
Roadway1	12		point2	2	750	-50	0				Average		
			point1	1	-750	-50	0						
Evening					19-Aug-14								
					TNM 2.5								
INPUT: TRAFFIC FOR LA													
PROJECT/CONTRACT:	<Project Name?>												
RUN:	Arrow Highway Industrial												
Roadway		Points											
Name		Name	No.	Segment									
				Autos		MTrucks		HTrucks		Buses		Motorcycles	
				V	S	V	S	V	S	V	S	V	S
				veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Roadway1		point2	2	888	45	25	45	17	45	3	45	5	45
		point1	1										
Evening						19-Aug-14							
						TNM 2.5							
INPUT: RECEIVERS													
PROJECT/CONTRACT:	<Project Name?>												
RUN:	Arrow Highway Industrial												
Receiver													
Name	No.	#DUs	Coordinates (ground)			Height	Input Sound Levels and Criteria				Active		
			X	Y	Z	above	Existing	Impact Criteria		NR	in		
						Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.		
			ft	ft	ft	ft	dBA	dBA	dB	dB			
Receiver1	1	1	0	0	0	4.92	0	66	10	8	Y		
Evening							19-Aug-14						
							TNM 2.5						
							Calculated with TNM 2.5						
RESULTS: SOUND LEVEL													
PROJECT/CONTRACT:		<Project Name?>											
RUN:		Arrow Highway Industrial											
BARRIER DESIGN:		INPUT HEIGHTS						Average pavement type shall be used unless					
								a State highway agency substantiates the use					
ATMOSPHERICS:		68 deg F, 50% RH						of a different type with approval of FHWA.					
Receiver													
Name	No.	#DUs	Existing	No Barrier					With Barrier				
			LAeq1h	LAeq1h		Increase over existing		Type	Calculated	Noise Reduction			
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated	
							Sub'l Inc					minus	
												Goal	
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB	
Receiver1	1	1	0	68.1	66	68.1	10	Snd Lvl	68.1	0	8	-8	
Dwelling Units		# DUs	Noise Reduction										
			Min	Avg	Max								
			dB	dB	dB								
All Selected		1	0	0	0								
All Impacted		1	0	0	0								
All that meet NR Goal		0	0	0	0								

Night						19-Aug-14							
						TNM 2.5							
INPUT: ROADWAYS								Average pavement type shall be used unless					
PROJECT/CONTRACT:	<Project Name?>							a State highway agency substantiates the use					
RUN:	Arrow Highway Industrial							of a different type with the approval of FHWA					
Roadway			Points										
Name	Width		Name	No.	Coordinates (pavement)			Flow Control			Segment		
					X	Y	Z	Control	Speed	Percent	Pvmt	On	
								Device	Constraint	Vehicles	Type	Struct?	
										Affected			
	ft				ft	ft	ft		mph	%			
Roadway1	12		point2	2	750	-50	0				Average		
			point1	1	-750	-50	0						
Night					19-Aug-14								
					TNM 2.5								
INPUT: TRAFFIC FOR LA													
PROJECT/CONTRACT:	<Project Name?>												
RUN:	Arrow Highway Industrial												
Roadway		Points											
Name		Name	No.	Segment									
				Autos		MTrucks		HTrucks		Buses		Motorcycles	
				V	S	V	S	V	S	V	S	V	S
				veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Roadway1		point2	2	300	45	24	45	26	45	2	45	2	45
		point1	1										
Night						19-Aug-14							
						TNM 2.5							
INPUT: RECEIVERS													
PROJECT/CONTRACT:	<Project Name?>												
RUN:	Arrow Highway Industrial												
Receiver													
Name	No.	#DUs	Coordinates (ground)			Height	Input Sound Levels and Criteria				Active		
			X	Y	Z	above	Existing	Impact Criteria		NR	in		
						Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.		
			ft	ft	ft	ft	dBA	dBA	dB	dB			
Receiver1	1	1	0	0	0	4.92	0	66	10	8	Y		
Night							19-Aug-14						
							TNM 2.5						
							Calculated with TNM 2.5						
RESULTS: SOUND LEVEL													
PROJECT/CONTRACT:		<Project Name?>											
RUN:		Arrow Highway Industrial											
BARRIER DESIGN:		INPUT HEIGHTS						Average pavement type shall be used unless					
								a State highway agency substantiates the use					
ATMOSPHERICS:		68 deg F, 50% RH						of a different type with approval of FHWA.					
Receiver													
Name	No.	#DUs	Existing	No Barrier					With Barrier				
			LAeq1h	LAeq1h		Increase over existing		Type	Calculated	Noise Reduction			
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated	
							Sub'l Inc					minus	
												Goal	
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB	
Receiver1	1	1	0	65.8	66	65.8	10	----	65.8	0	8	-8	
Dwelling Units		# DUs	Noise Reduction										
			Min	Avg	Max								
			dB	dB	dB								
All Selected		1	0	0	0								
All Impacted		0	0	0	0								
All that meet NR Goal		0	0	0	0								

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Appendix C

TNM MODELING FOR ARROW HIGHWAY TRAFFIC FOR VARIOUS TIME PERIODS WITH PROJECT

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Daytime						19-Aug-14							
						TNM 2.5							
INPUT: ROADWAYS								Average pavement type shall be used unless					
PROJECT/CONTRACT:	<Project Name?>							a State highway agency substantiates the use					
RUN:	Arrow Highway Industrial							of a different type with the approval of FHWA					
Roadway			Points										
Name	Width		Name	No.	Coordinates (pavement)			Flow Control			Segment		
					X	Y	Z	Control	Speed	Percent	Pvmt	On	
								Device	Constraint	Vehicles	Type	Struct?	
										Affected			
	ft				ft	ft	ft		mph	%			
Roadway1	12		point2	2	750	-50	0				Average		
			point1	1	-750	-50	0						
Daytime					19-Aug-14								
					TNM 2.5								
INPUT: TRAFFIC FOR LA													
PROJECT/CONTRACT:	<Project Name?>												
RUN:	Arrow Highway Industrial												
Roadway		Points											
Name		Name	No.	Segment									
				Autos		MTrucks		HTrucks		Buses		Motorcycles	
				V	S	V	S	V	S	V	S	V	S
				veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Roadway1		point2	2	1588	45	79	45	37	45	9	45	8	45
		point1	1										
Daytime						19-Aug-14							
						TNM 2.5							
INPUT: RECEIVERS													
PROJECT/CONTRACT:	<Project Name?>												
RUN:	Arrow Highway Industrial												
Receiver													
Name	No.	#DUs	Coordinates (ground)			Height	Input Sound Levels and Criteria				Active		
			X	Y	Z	above	Existing	Impact Criteria		NR	in		
						Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.		
			ft	ft	ft	ft	dBA	dBA	dB	dB			
Receiver1	1	1	0	0	0	4.92	0	66	10	8	Y		
Daytime							19-Aug-14						
							TNM 2.5						
							Calculated with TNM 2.5						
RESULTS: SOUND LEVEL													
PROJECT/CONTRACT:		<Project Name?>											
RUN:		Arrow Highway Industrial											
BARRIER DESIGN:		INPUT HEIGHTS						Average pavement type shall be used unless					
								a State highway agency substantiates the use					
ATMOSPHERICS:		68 deg F, 50% RH						of a different type with approval of FHWA.					
Receiver													
Name	No.	#DUs	Existing	No Barrier					With Barrier				
			LAeq1h	LAeq1h		Increase over existing		Type	Calculated	Noise Reduction			
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated	
							Sub'l Inc					minus	
												Goal	
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB	
Receiver1	1	1	0	71.1	66	71.1	10	Snd Lvl	71.1	0	8	-8	
Dwelling Units		# DUs	Noise Reduction										
			Min	Avg	Max								
			dB	dB	dB								
All Selected		1	0	0	0								
All Impacted		1	0	0	0								
All that meet NR Goal		0	0	0	0								

Evening						19-Aug-14							
						TNM 2.5							
INPUT: ROADWAYS								Average pavement type shall be used unless					
PROJECT/CONTRACT:	<Project Name?>							a State highway agency substantiates the use					
RUN:	Arrow Highway Industrial							of a different type with the approval of FHWA					
Roadway			Points										
Name	Width		Name	No.	Coordinates (pavement)			Flow Control			Segment		
					X	Y	Z	Control	Speed	Percent	Pvmt	On	
								Device	Constraint	Vehicles	Type	Struct?	
										Affected			
	ft				ft	ft	ft		mph	%			
Roadway1	12		point2	2	750	-50	0				Average		
			point1	1	-750	-50	0						
Evening					19-Aug-14								
					TNM 2.5								
INPUT: TRAFFIC FOR LA													
PROJECT/CONTRACT:	<Project Name?>												
RUN:	Arrow Highway Industrial												
Roadway		Points											
Name		Name	No.	Segment									
				Autos		MTrucks		HTrucks		Buses		Motorcycles	
				V	S	V	S	V	S	V	S	V	S
				veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Roadway1		point2	2	909	45	31	45	21	45	4	45	5	45
		point1	1										
Evening						19-Aug-14							
						TNM 2.5							
INPUT: RECEIVERS													
PROJECT/CONTRACT:	<Project Name?>												
RUN:	Arrow Highway Industrial												
Receiver													
Name	No.	#DUs	Coordinates (ground)			Height	Input Sound Levels and Criteria				Active		
			X	Y	Z	above	Existing	Impact Criteria		NR	in		
						Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.		
			ft	ft	ft	ft	dBA	dBA	dB	dB			
Receiver1	1	1	0	0	0	4.92	0	66	10	8	Y		
Evening							19-Aug-14						
							TNM 2.5						
							Calculated with TNM 2.5						
RESULTS: SOUND LEVEL													
PROJECT/CONTRACT:		<Project Name?>											
RUN:		Arrow Highway Industrial											
BARRIER DESIGN:		INPUT HEIGHTS						Average pavement type shall be used unless					
								a State highway agency substantiates the use					
ATMOSPHERICS:		68 deg F, 50% RH						of a different type with approval of FHWA.					
Receiver													
Name	No.	#DUs	Existing	No Barrier					With Barrier				
			LAeq1h	LAeq1h		Increase over existing		Type	Calculated	Noise Reduction			
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated	
							Sub'l Inc					minus	
												Goal	
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB	
Receiver1	1	1	0	68.5	66	68.5	10	Snd Lvl	68.5	0	8	-8	
Dwelling Units		# DUs	Noise Reduction										
			Min	Avg	Max								
			dB	dB	dB								
All Selected		1	0	0	0								
All Impacted		1	0	0	0								
All that meet NR Goal		0	0	0	0								

Night						19-Aug-14							
						TNM 2.5							
INPUT: ROADWAYS								Average pavement type shall be used unless					
PROJECT/CONTRACT:	<Project Name?>							a State highway agency substantiates the use					
RUN:	Arrow Highway Industrial							of a different type with the approval of FHWA					
Roadway			Points										
Name	Width		Name	No.	Coordinates (pavement)			Flow Control			Segment		
					X	Y	Z	Control	Speed	Percent	Pvmt	On	
								Device	Constrain	Vehicles	Type	Struct?	
										Affected			
	ft				ft	ft	ft		mph	%			
Roadway1	12		point2	2	750	-50	0				Average		
			point1	1	-750	-50	0						
Night					19-Aug-14								
					TNM 2.5								
INPUT: TRAFFIC FOR LA													
PROJECT/CONTRACT:	<Project Name?>												
RUN:	Arrow Highway Industrial												
Roadway		Points											
Name		Name	No.	Segment									
				Autos		MTrucks		HTrucks		Buses		Motorcycles	
				V	S	V	S	V	S	V	S	V	S
				veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Roadway1		point2	2	321	45	30	45	30	45	3	45	2	45
		point1	1										
Night						19-Aug-14							
						TNM 2.5							
INPUT: RECEIVERS													
PROJECT/CONTRACT:	<Project Name?>												
RUN:	Arrow Highway Industrial												
Receiver													
Name	No.	#DUs	Coordinates (ground)			Height	Input Sound Levels and Criteria				Active		
			X	Y	Z	above	Existing	Impact Criteria		NR	in		
						Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.		
			ft	ft	ft	ft	dBA	dBA	dB	dB			
Receiver1	1	1	0	0	0	4.92	0	66	10	8	Y		
Night							19-Aug-14						
							TNM 2.5						
							Calculated with TNM 2.5						
RESULTS: SOUND LEVEL													
PROJECT/CONTRACT:		<Project Name?>											
RUN:		Arrow Highway Industrial											
BARRIER DESIGN:		INPUT HEIGHTS						Average pavement type shall be used unless					
								a State highway agency substantiates the use					
ATMOSPHERICS:		68 deg F, 50% RH						of a different type with approval of FHWA.					
Receiver													
Name	No.	#DUs	Existing	No Barrier					With Barrier				
			LAeq1h	LAeq1h		Increase over existing		Type	Calculated	Noise Reduction			
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated	
							Sub'l Inc					minus	
												Goal	
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB	
Receiver1	1	1	0	66.4	66	66.4	10	Snd Lvl	66.4	0	8	-8	
Dwelling Units		# DUs	Noise Reduction										
			Min	Avg	Max								
			dB	dB	dB								
All Selected		1	0	0	0								
All Impacted		1	0	0	0								
All that meet NR Goal		0	0	0	0								

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Appendix D

CALCULATION OF THE CNEL FOR ARROW HIGHWAY TRAFFIC

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EXISTING NOISE LEVELS AND DISTANCES TO CONTOURS AT POSTED SPEEDS

This spreadsheet uses the projections generated by the FHWA TNM noise model and calculates the CNEL @ 50 feet as well as the distances to the 70, 65, and 60 dBA CNEL using hard site modeling.

The calculation is: CNEL = $10*LOG(((12*10^{(Day/10)})+(3*10^{((Evening+5)/10)})+(9*10^{((Night+10)/10)}))/24)$

Speed	Daytime L_{eq}	Evening L_{eq}	Night L_{eq}	CNEL for	26,268	ADT
45	70.9	68.1	65.8	73.6		
Road	Speed (mph)	ADT	CNEL (dBA @ 50 Feet)	Distance to 70 dBA CNEL	Distance to 65 dBA CNEL	Distance to 60 dBA CNEL
Arrow Highway	45	26,268	73.6	115	363	1,148

WITH PROJECT NOISE LEVELS AND DISTANCES TO CONTOURS AT POSTED SPEEDS

This spreadsheet uses the projections generated by the FHWA TNM noise model and calculates the CNEL @ 50 feet as well as the distances to the 70, 65, and 60 dBA CNEL using hard site modeling.

The calculation is: CNEL = $10*LOG(((12*10^{(Day/10)})+(3*10^{((Evening+5)/10)})+(9*10^{((Night+10)/10)}))/24)$

Speed	Daytime L_{eq}	Evening L_{eq}	Night L_{eq}	CNEL for	27,036	ADT
45	71.1	68.5	66.4	74.1		
Road	Speed (mph)	ADT	CNEL (dBA @ 50 Feet)	Distance to 70 dBA CNEL	Distance to 65 dBA CNEL	Distance to 60 dBA CNEL
Arrow Highway	45	27,036	74.1	128	405	1,280

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Appendix E

SOUND WALL CALCULATIONS

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East 12-Foot Wall For Driveway			
This spreadsheet was prepared in accordance with the calculations included in Table 6-9, *Computation of Shielding: Barriers and Terrain* , included in the Federal Transit Administration's Transit Noise and Vibration Impact Assessment, April 1995			
Distance from Receptor to Barrier (Feet)		10	(H7)
Distance from Source to Barrier (Feet)		15	(H8)
Height of receptor (Feet)		5	(H9)
Height of Source (Feet)		8	(H10)
Height of barrier (Feet)		12	(H11)
H_{eff} (no barrier) =	(H10+H9)/2	6.5	(H13)
H_{eff} (with barrier) =	(H9 + 2* H11+ H10)/2	18.5	(H14)
G_{nb} =	0.75*(1-(H13/42))	0.6339286	(H16)
G_b =	0.75*(1-(H14/42))	0.4196429	(H17)
P_{nb} =	SQRT((H10-H9)^2+(H7+H8)^2)	25.179357	(H19)
P_b =	SQRT((H11-H9)^2+(H7)^2) +SQRT((H11-H10)^2+(H8)^2)	27.73073	(H20)
P_{dif} =	H20-H19	2.5513737	(H21)
$A_{barrier}$ =	(20*LOG(2.51*SQRT(H21)/TANH(4.46*SQRT(H21))))+5	17.061226	(H23)
$IL_{barrier}$ =	H23-10*(H16-H17)*LOG((H6+H7)/50)	18.559019	(H25)

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Appendix F

CARB IDLE LIMIT REGULATIONS

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FINAL REGULATION ORDER
AIRBORNE TOXIC CONTROL MEASURE TO LIMIT DIESEL-FUELED COMMERCIAL MOTOR VEHICLE IDLING

Adopt new Section 2485 within Chapter 10 – Mobile Source Operational Controls, Article 1 – Motor Vehicles, Division 3. Air Resources Board, title 13, California Code of Regulations to read as follows:

Section 2485. Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling.

(a) **Purpose.** The purpose of this airborne toxic control measure is to reduce public exposure to diesel particulate matter and other air contaminants by limiting the idling of diesel-fueled commercial motor vehicles.

(b) **Applicability.** This section applies to diesel-fueled commercial motor vehicles that operate in the State of California with gross vehicular weight ratings of greater than 10,000 pounds that are or must be licensed for operation on highways. This specifically includes:
- (1) California-based vehicles; and
- (2) Non-California-based vehicles.

(c) **Requirements.** On or after February 1, 2005, the driver of any vehicle subject to this section:
- (1) Shall not idle the vehicle's primary diesel engine for greater than 5.0 minutes at any location, except as noted in Subsection (d); and
- (2) Shall not operate a diesel-fueled auxiliary power system (APS) to power a heater, air conditioner, or any ancillary equipment on that vehicle during sleeping or resting in a sleeper berth for greater than 5.0 minutes at any location when within 100 feet of a restricted area, except as noted in Subsection (d).

(d) **Exceptions.** Subsection (c) does not apply for the period or periods during which
- (1) A bus is idling for
  - (A) Up to 10.0 minutes prior to passenger boarding, or
  - (B) When passengers are onboard;
- (2) Idling of the primary diesel-engine is necessary to power a heater, air conditioner, or any ancillary equipment during sleeping or resting in a sleeper berth. This provision does not apply when operating within 100 feet of a restricted area;
- (3) Idling when the vehicle must remain motionless due to traffic conditions, an official traffic control device, or an official traffic control signal over which the driver has no control, or at the direction of a peace officer, or operating a diesel-fueled APS at the direction of a peace officer;
- (4) Idling when the vehicle is queuing that at all times is beyond 100 feet from any restricted area;
- (5) Idling of the primary engine or operating a diesel-fueled APS when forced to remain motionless due to immediate adverse weather conditions affecting the safe operation of the vehicle or due to mechanical difficulties over which the driver has no control;
- (6) Idling to verify that the vehicle is in safe operating condition as required by law and that all equipment is in good working order, either as part of a daily vehicle inspection or as otherwise needed, provided that such engine idling is mandatory for such verification;
- (7) Idling of the primary engine or operating a diesel-fueled APS is mandatory for testing, servicing, repairing, or diagnostic purposes;

(8) Idling when positioning or providing a power source for equipment or operations, other than transporting passengers or propulsion, which involve a power take off or equivalent mechanism and is powered by the primary engine for:
  (A) Controlling cargo temperature, operating a lift, crane, pump, drill, hoist, mixer (such as a ready mix concrete truck), or other auxiliary equipment;
  (B) Providing mechanical extension to perform work functions for which the vehicle was designed and where substitute alternate means to idling are not reasonably available; or
  (C) Collection of solid waste or recyclable material by an entity authorized by contract, license, or permit by a school or local government;

(9) Idling of the primary engine or operating a diesel-fueled APS when operating defrosters, heaters, air conditioners, or other equipment solely to prevent a safety or health emergency;

(10) Idling of the primary engine or operating a diesel-fueled APS by authorized emergency vehicles while in the course of providing services for which the vehicle is designed;

(11) Idling of military tactical vehicles during periods of training; and

(12) Idling when operating equipment such as a wheelchair or people assist lift as prescribed by the Americans with Disabilities Act;

(e) **Relationship to Other Law**. Nothing in this section allows idling in violation of other applicable law, including, but not limited to:
  (1) California Vehicle Code Section 22515;
  (2) Title 13, Section 2480, California Code of Regulations;
  (3) California Health and Safety Code Section 40720; or
  (4) Any applicable ordinance, rule, or requirement as stringent as, or more stringent than, this section.

(f) **Enforcement.** This section may be enforced by the Air Resources Board; peace officers as defined in California Penal Code, title 3, chapter 4.5, Sections 830 et seq. and their respective law enforcement agencies' authorized representatives; and air pollution control or air quality management districts.

(g) **Penalties.** For violations of subsection (c)(1) or (c)(2), the driver of a subject vehicle is subject to a minimum civil penalty of 100 dollars and to criminal penalties as specified in the Health and Safety Code and the Vehicle Code.

(h) **Definitions.** The following definitions apply to this section:
  (1) "Authorized emergency vehicle" is as defined in Vehicle Code Section 165.
  (2) "Auxiliary power system" or "APS" means any device that provides electrical, mechanical, or thermal energy to the primary diesel engine, truck cab, or sleeper berth as an alternative to idling the primary diesel engine.
  (3) "Bus" means any vehicle defined in Title 13, California Code of Regulations, Section 2480, subsections (h) (13)-(16), inclusive or as defined in the Vehicle Code Section 233.
  (4) "Commercial Motor Vehicle" means any vehicle or combination of vehicles defined in Vehicle Code Section 15210(b) and any other motor truck or bus with a gross vehicle weight rating of 10,001 pounds or more, except the following:
    (A) A zero emission vehicle; or
    (B) A pickup truck as defined in Vehicle Code Section 471.
  (5) "Driver" is as defined in Vehicle Code Section 305.
  (6) "Gross vehicle weight rating" is as defined in Vehicle Code Section 350.
  (7) "Highway" is as defined in Vehicle Code Section 360.
  (8) "Idling" means the vehicle engine is running at any location while the vehicle is stationary.

(9) "Motor truck" or "motortruck" means a motor vehicle designed, used, or maintained primarily for the transportation of property.

(10) "Official traffic control device" is as defined in Vehicle Code Section 440.

(11) “Official traffic control signal" is as defined in Vehicle Code Section 445.

(12) “Owner” is as defined in Vehicle Code Section 460.

(13) “Primary diesel engine” means the diesel-fueled engine used for vehicle propulsion.

(14) “Queuing” means (A) through (C)

- (A) The intermittent starting and stopping of a vehicle;
- (B) While the driver, in the normal course of doing business, is waiting to perform work or a service; and
- (C) When shutting the vehicle engine off would impede the progress of the queue and is not practicable.
- (D) Queuing does not include the time a driver may wait motionless in line in anticipation of the start of a workday or opening of a location where work or a service will be performed.

(15) “Restricted area” means any real property zoned for individual or multifamily housing units that has one or more of such units on it.

(16) "Safety or health emergency" means:

- (A) A sudden, urgent, or usually unforeseen, occurrence; or
- (B) A foreseeable occurrence relative to a medical or physiological condition.

(17) “Sleeper berth” is as defined in Title 13, California Code of Regulations, Section 1265.

(18) “Vehicle” is as defined in the Vehicle Code Section 670.

Authority: Sections 39600, 39601, 39614(b)(6)(A), 39658, 39667, 43000.5(d), 43013(b), 43013(h), 43018(b), and 43018(c), Health and Safety Code; and Western Oil & Gas Assn. v. Orange County Air Pollution Control Dist. (1975) [14 Cal.3d.411].

Reference: Sections 39002, 39003, 39027, 39500, 39600, 39650, 39655, 39656, 39657, 39658, 39659, 39662, 39665, 39674, 39675, 42400, 42400.1, 42400.2, 42400.3, 42402, 42402.1, 42402.2, 42402.3, 42403.5, 42410, 43013, 43018, Health and Safety Code; Sections 305, 336, 350, 440, 445, 545, 546, 642, 680, 21400, 22452, 22515, 27153, 40001, 40001(b)(5), Vehicle Code; and Sections 1201,1900, 1962, 2480, Title13, California Code of Regulations.

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Appendix G

Arrow Highway Business Park Traffic Impact Analysis

(Sasaki Transportation Engineers, August 13, 2014)

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SASAKI TRANSPORTATION SERVICES, INC.

August 13, 2014

Environmental Impact Sciences
Mr. Peter Lewandowski
26051 Via Concha
Mission Viejo, CA 92691

SUBJECT: **Warehouse/Manufacturing Project, 16203-16233 Arrow Highway – City of Irwindale**

Dear Mr. Lewandowski:

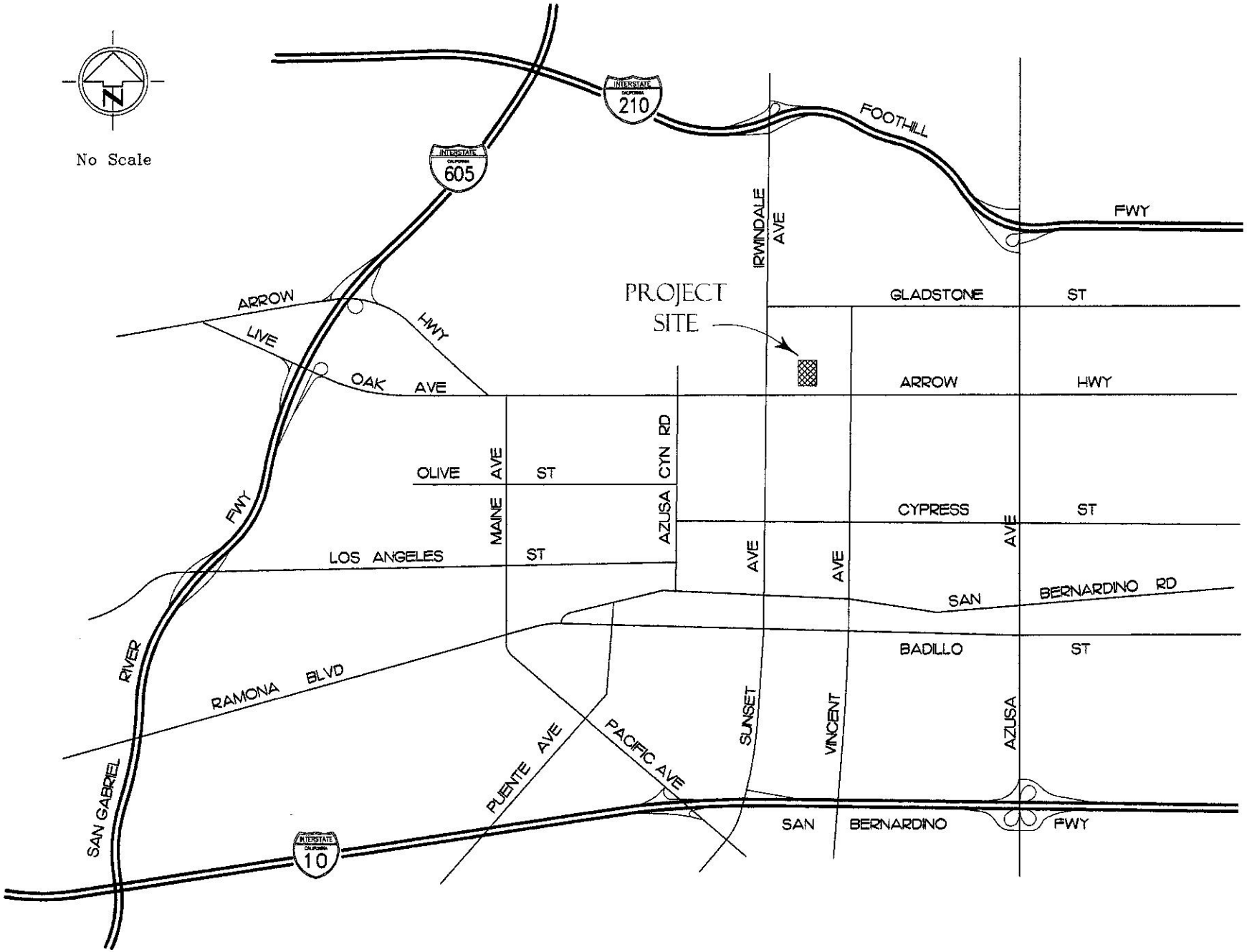
This Traffic Impact Analysis ("TIA") has been prepared in accordance with City of Irwindale TIA guidelines and practices, presents evaluations of potential traffic impacts, and is suitable for inclusion in required environmental documents being prepared for the proposed warehouse/manufacturing speculative building project ("Project"). The Project site is located on the north side of Arrow Highway, between Irwindale Avenue and Vincent Avenue. The TIA preparation process has included receipt of information provided by the City of Irwindale and preliminary review by City staff of interim TIA submittals. **Figure 1** shows the general vicinity of the proposed Project.

This TIA is based on recently collected traffic data, information provided by the Project applicant/their representatives, comments from City staff, field review of the study area, and use of pertinent reference materials. An important element of these analyses has been consistency with previously completed analyses including the "Draft Transportation Study for the Azusa Canyon Industrial Park" ("Azusa Canyon TS") dated September 2013, prepared by Gibson Transportation Consulting, Inc. ("Gibson").

PROJECT DESCRIPTION

The Project totals about 6.25 acres and is located within the City of Irwindale on the north side of Arrow Hwy. between Irwindale Ave. and Vincent Ave. There are no active uses at the site and a relatively small existing building appears to have been partially demolished. The Project is not fully defined although the currently anticipated parameters are, a building size of about 130,000-132,000 square feet ("SF") with potential uses to include, manufacturing, warehouse, distribution, showroom, and office. It is likely the office uses will be ancillary to a primary manufacturing, warehouse, and/or distribution operation(s).

P.O. BOX 5159 LAGUNA BEACH, CA 92652 (949) 376-6613



PROJECT LOCATION (16203-16233 ARROW HIGHWAY)

SASAKI TRANSPORTATION SERVICES

FIGURE 1

The Project building square footage could be comprised of a single building or multiple buildings at the site. Under existing conditions at the Project site a right-turn only driveway(s) would provide access at Arrow Hwy. due to an existing raised median along the Project frontage. If a future specific user desires left turn access at Arrow Hwy. they will need to prepare added operational access analyses to justify median modification(s) that would allow the added turn movements. The evaluations in this TIA, however, have been prepared to address potential off-site impacts of the (speculative) Project, under either right-turn only or full access conditions.

Figure 2 provides a representative Project site plan for discussion purposes but as mentioned above, a range of actual development options are addressed within this TIA which may or may not have a layout similar to the concept shown in **Figure 2**. Two added site plan concepts are provided in the Appendix. To provide a conservative traffic evaluation it was assumed the Project would be developed by year 2016 and assumptions included in this TIA address related projects and their associated traffic, that are anticipated to extend beyond the year 2016 horizon.

EXISTING CONDITIONS

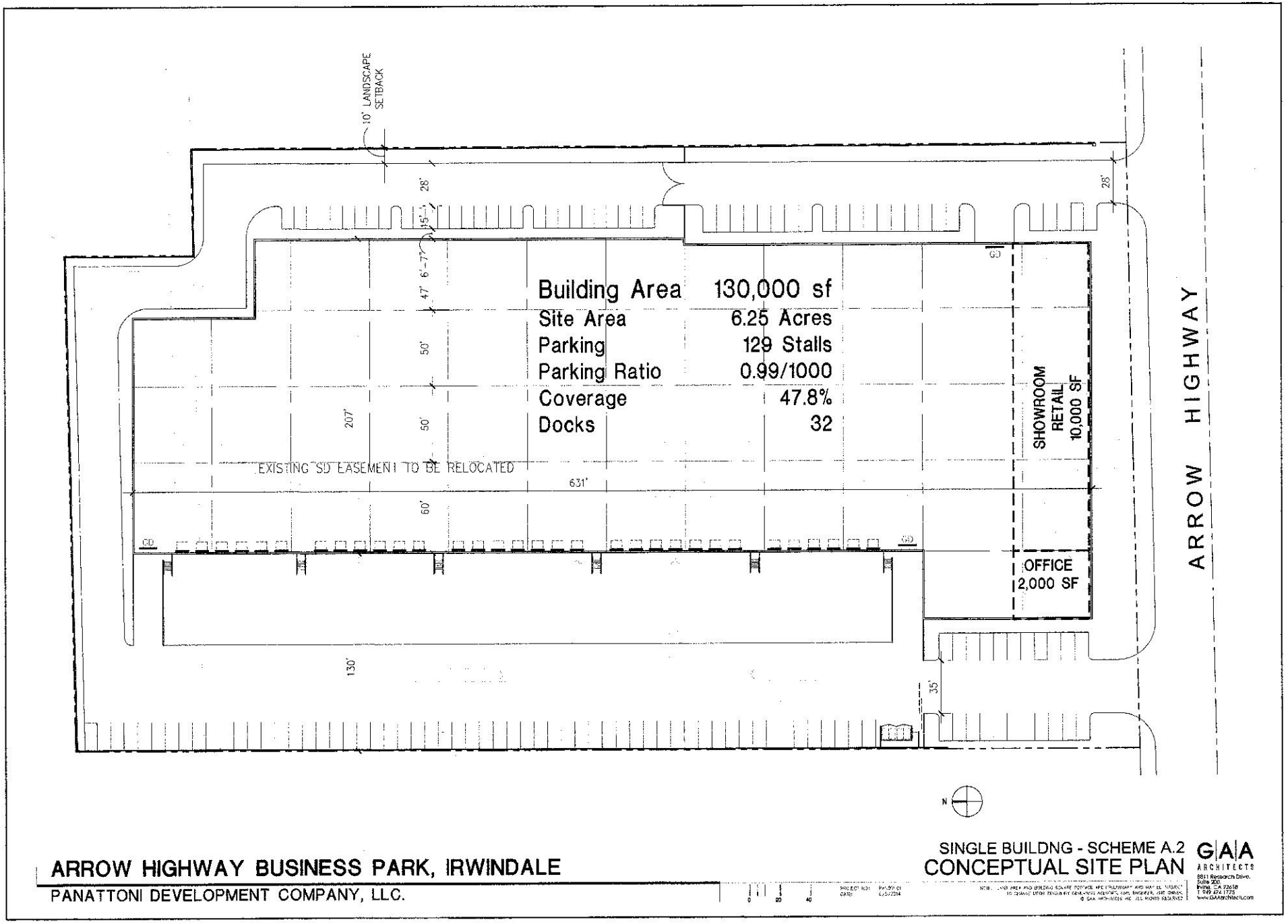
Study Roadways and Traffic Volumes

Arrow Highway in general has an east-west alignment within the City of Irwindale. To the west, Arrow Highway begins at Live Oak Avenue north-west of the I-605 Freeway and to the east terminates in the City of Upland, where it becomes 8th Street. At the north-west end, Arrow Highway provides direct access to the I-605 Freeway and to the SR-57 Freeway in the City of San Dimas. Within the study area, Arrow Highway is a four-lane roadway (some sections there are three eastbound lanes) divided by a raised median. The speed limit on Arrow Highway is 45 MPH with no on-street parking is permitted in signed areas.

Live Oak Avenue is an east-west roadway which runs between Encinita Avenue in Temple City to the west, and terminates to the east at Arrow Highway in Baldwin Park. Live Oak Avenue provides direct access to the I-605 Freeway. Between Rivergrade Road and Stewart Avenue, Live Oak Avenue provides three lanes of travel in the eastbound direction and two lanes of travel in the westbound direction. East of Stewart Avenue, Live Oak Avenue is a four lane divided roadway.

Azusa Canyon Road travels in a north-south direction begins at Arrow Highway to the north and ends at San Bernardino Road to the south. Azusa Canyon Roadway provides four lanes of travel which is divided by a two-way left turn lane and is undivided south of Cypress Street. On street parking is permitted in restricted areas with a posted speed limit of 40 MPH.

Irwindale Avenue is a north-south roadway which runs between Foothill Boulevard to the north and Badillo in West Covina to the south. Irwindale Avenue provides direct access to the I-210 Freeway. This four lane roadway is divided by raised medians. There is no parking permitted in the vicinity of Arrow Hwy. There is a posted speed limit on Irwindale Avenue of 35 MPH.



SITE PLAN

SASAKI TRANSPORTATION SERVICES

FIGURE 2

Vincent Avenue is a north-south roadway that runs between Gladstone in the City of Azusa to the north and transitions into Glendora Avenue in the City of West Covina to the south. Vincent Avenue provides direct freeway access to the I-10. Vincent Avenue provides four lanes of travel which are divided by painted medians and two-way left turn lanes. The posted speed limit along Vincent Avenue is 45 MPH.

Cypress Street provides east-west travel between Azusa Canyon Road to the west and terminates at the San Dimas Sports Complex in the City of San Dimas. Within the study area, Cypress Street provides four lanes of travel divided by painted medians and two-way left turn lanes. The posted speed limit is 35 MPH.

Truck Routes

The following trucks routes are designated by the City of Irwindale in the study area.

- Arrow Highway
- Azusa Canyon Rd.
- Irwindale Avenue

Intersection Analyses

Based upon input from City of Irwindale staff, the scope for this TIA was developed. We were directed to evaluate a total of five (5) study intersections. The study locations are listed below:

Signalized

- Arrow Hwy. / Live Oak Ave.
- Arrow Hwy. / Azusa Canyon Rd.
- Arrow Hwy. / Irwindale Ave.
- Cypress St. / Irwindale Ave.
- Arrow Hwy. / Vincent Ave.

Unsignalized

- Not Applicable

In order to analyze the study locations, AM and PM peak period traffic counts were conducted at the study intersections in July 2014. A traffic count firm, *Counts Unlimited* conducted these weekday turning movement counts during the 7:00-9:00AM and 4:00-6:00PM periods at the five study intersections. Per the City of Irwindale traffic study guidelines, these manual traffic counts included separate documentation of trucks for each of the intersection locations.

The highest hour within these peak commuter periods, of passenger vehicles and trucks were identified for use in the intersection analyses. The detailed data sheets providing summaries of

the intersection counts are contained in the **Appendix**.

In addition, 24-hour machine traffic counts were conducted at five locations in the vicinity of the Project. These counts primarily provide needed information for the noise/air quality analyses. Summary table of these counts are also included in the **Appendix**.

As identified above, all of the study intersections are signalized. These study intersections were analyzed utilizing the required City of Irwindale procedures which reference the Highway Capacity Manual ("HCM"). In order to apply HCM evaluations at the study intersections, Project traffic impacts were analyzed using "Highway Capacity Software" ("HCS") which provides analyses based on the HCM methodologies.

The HCS/HCM procedures are based upon vehicle delay. The delay values are then related to Levels of Service (LOS), which are descriptions of intersection operations that range from "A" (the best) to "F" (the worst). It is generally recognized that LOS D or better represents acceptable intersection operations, while LOS E and F are considered over capacity. The various LOS definitions are related to specific ranges of "delay" and copies of the pertinent pages are provided in the **Appendix**.

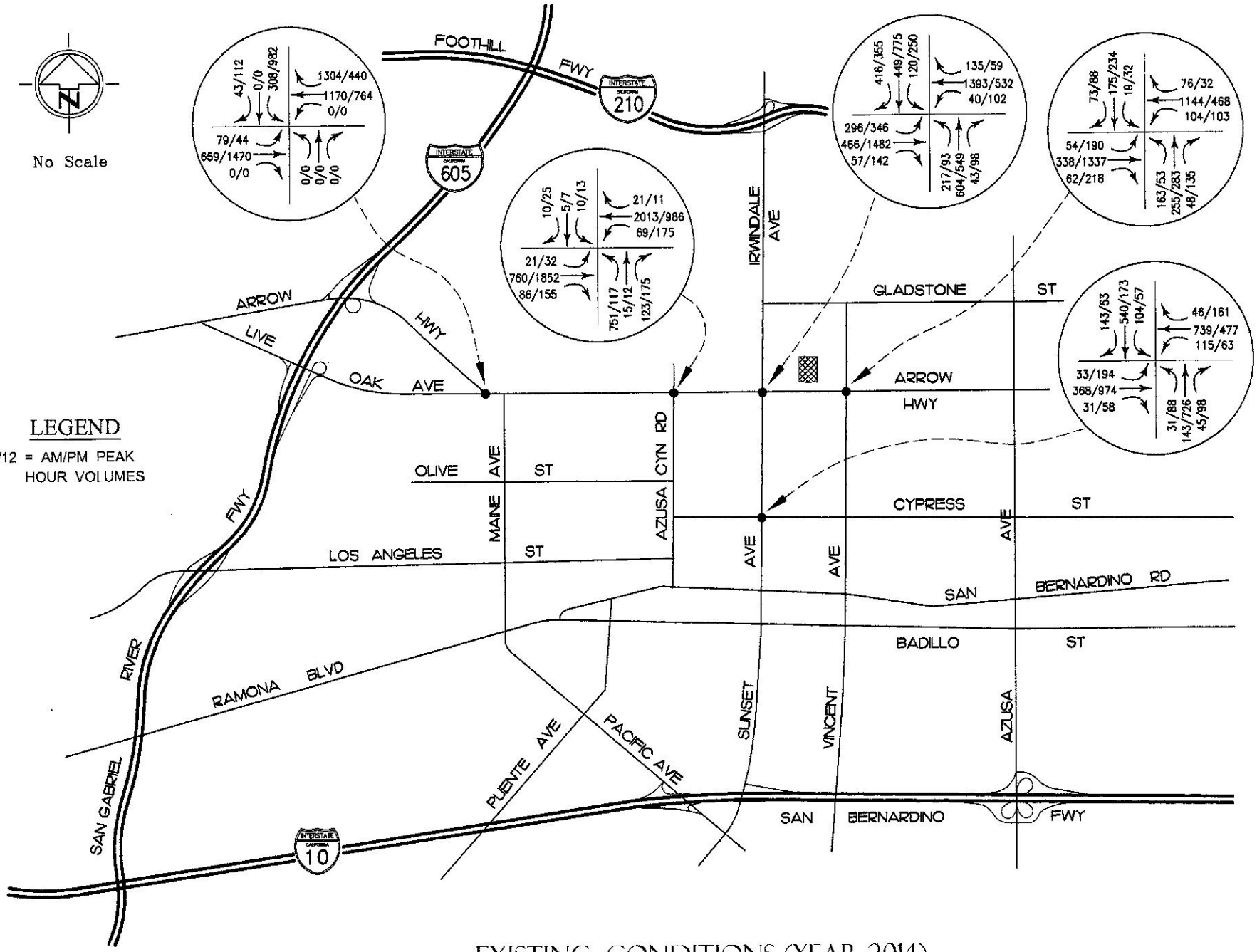
Intersection Analyses - Existing Conditions

The "Existing" AM and PM peak hour volumes documented through the recent counts at the study intersections during peak, commuter hours are shown in **Figure 3**. In addition since the City traffic study guidelines require truck classification counts, passenger car equivalent ("PCE") factors were applied to these data to account for the influence of truck traffic on the surrounding roadways. The following PCE factors which are the same as those used in the Gibson study were applied to the intersection counts and the resulting PCE volumes are presented in **Figure 4**:

- Passenger vehicles x 1.0 = PCE
- Two-axle, trucks & buses x 1.5 = PCE
- Three-axle trucks x 2.0 = PCE
- Four-axles or more x 3.0 = PCE

For consistency purposes the existing AM and PM peak hour counts and subsequent PCE conversions were compared to the Azusa Canyon TS findings. Based on the comparisons where there were matching study intersections, it was determined that at two locations the Gibson study volumes would provide a more conservative evaluation. Therefore, to provide "worst case" analyses, Azusa Canyon TS existing volumes (Figure 5 from that study contained in the **Appendix** for this TIA) for the Arrow/Azusa Cyn. and Arrow/Irwindale intersections.

In addition, current intersection geometries and pertinent field data were collected for use in the existing conditions analyses of the study intersections. The existing lane geometries are presented in the analyses worksheets and translate to intersection capacities at the study intersections.



EXISTING CONDITIONS (YEAR 2014)

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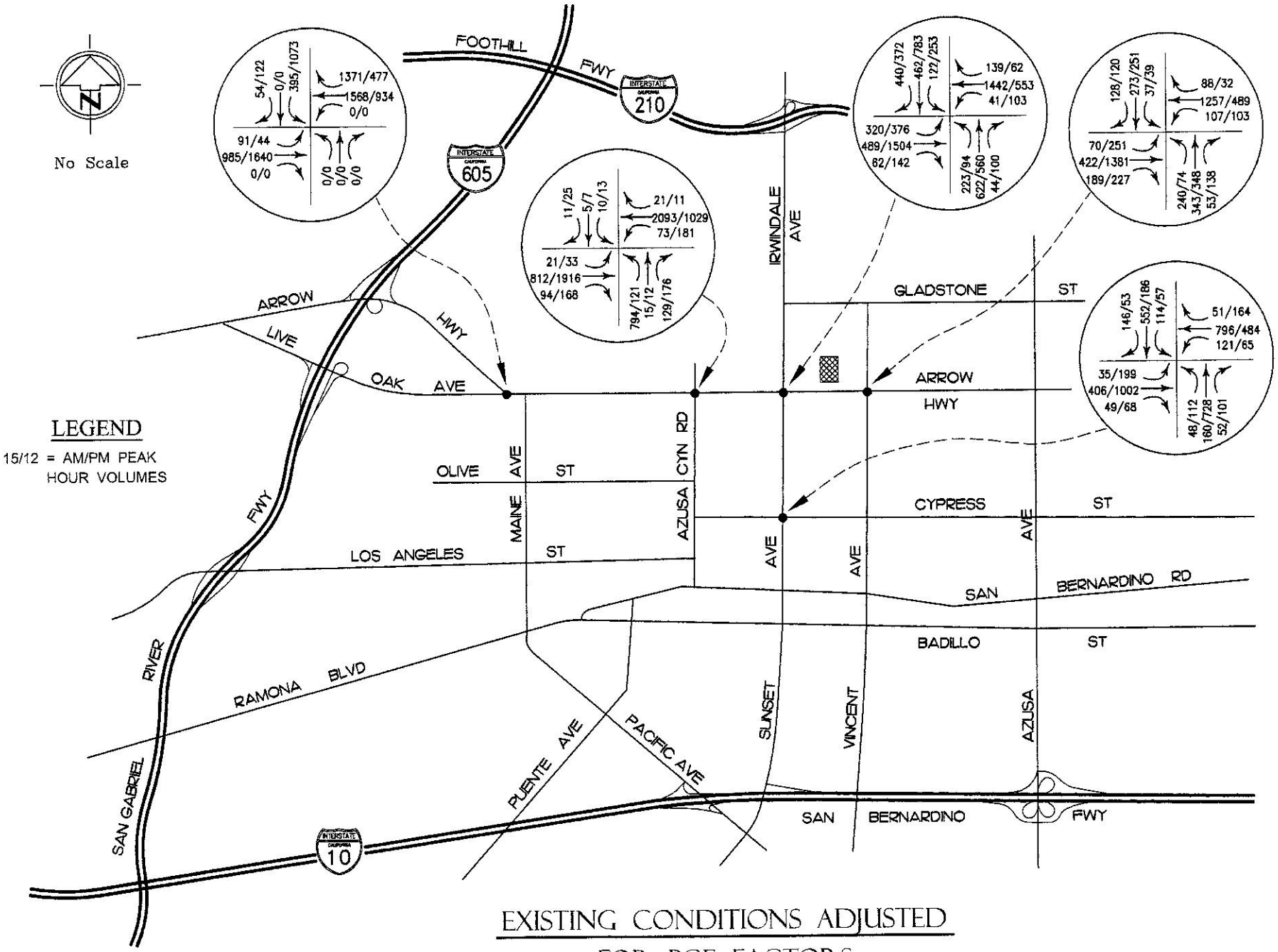
FIGURE 3



EXISTING CONDITIONS ADJUSTED FOR PCE FACTORS

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FIGURE 4

In general terms, the HCS/HCM methodology provides intersection delay calculations resulting from the peak hour, intersection volumes for the various movements and the corresponding intersection lane capacities. These vehicle delays for the critical intersection movements then provide quantitative measures of the overall intersection operations.

Similar to a school grading system, specified ranges of delay values ("test scores") correspond to Levels of Service (LOS) that indicate intersection operations ("letter grades") that range from LOS "A" the best to LOS "F," the worst. The **Appendix** contains the specific delay ranges that correspond to the different LOS intersection operations.

For traffic analyses at intersections, most jurisdictions accept LOS A through LOS D to be acceptable operations, while LOS E and LOS F are viewed as over capacity. From this starting point individual agencies will often have more defined requirement as capacity conditions are approached and/or exceeded. Since this TIA has study intersections that involve multiple jurisdictions this basic guideline was referenced and more specifics addressed as appropriate.

Table 1 summarizes the results of the intersection analysis findings under existing conditions. The study intersections of Arrow Highway/Azusa Canyon and Arrow Highway/Irwindale currently operate at an unacceptable LOS E or F during either or both the AM and PM peak hours. The remaining three study intersections are currently operating at acceptable Levels of Service during both the AM and PM peak hours. The HCM analyses worksheets are provided in the **Appendix**.

PROJECT CONDITIONS

Trip Generation

As indicated earlier the Project involves proposed entitlements for a building that does not have a specific user at this time. The potential land uses that could occupy the Project include but may not be limited to warehouse, manufacturing, distribution, showroom, and office. Since a variety of land uses are being considered, the analyses assumptions selected are intended to provide the most flexibility given the general size and type of project(s) presently anticipated.

The trip generation evaluations were developed in conjunction with City of Irwindale staff through submittal of preliminary trip generation summary tables. In general, "worst case" assumptions were used and the following is a brief summary of the trip generation process applied:

- Institute of Transportation Engineers ("ITE") rates were referenced and applied to several Project land use scenarios. The assumed development alternatives provide evaluations of the sizes and types of developments anticipated, but also using conservative trip generation assumptions. The ITE trip rates were referenced from the ***Trip Generation Manual***[1]. The trip generation rates applied to the proposed uses, are listed in **Table 2**.

---

[1] ***Trip Generation Manual, Ninth Edition***; *Institute of Transportation Engineers (ITE)*; 2012.

TABLE 1

Intersection Analyses Summary

INTERSECTION		Existing Conditions		Existing Plus Project		Future w/o Project		Future w/ Project	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Arrow Highway & Live Oak									
	AM	16.3	B	16.5	B	26.7	C	27.9	C
	PM	27.1	C	27.5	C	50.7	D	51.5	D
Arrow Highway & Azusa Canyon									
	AM	163.6	F	164.3	F	233.7	F	234.1	F
	PM	56.0	E	57.6	E	129.2	F	131.4	F
Arrow Highway & Irwindale									
	AM	69.1	E	73.7	E	126.6	F	130.2	F
	PM	45.0	D	50.2	D	73.7	E	82.8	F
*With Mitigation	AM							129.5	F
*With Mitigation	PM							77.0	E
Arrow Highway & Vincent									
	AM	17.8	B	23.3	C	24.7	C	32.7	C
	PM	13.1	B	13.5	B	15.1	B	15.9	B
Irwindale & Cypres									
	AM	20.2	C	20.2	C	21.1	C	21.2	C
	PM	31.4	C	32.4	C	33.8	C	33.9	C

*Mitigations for *Future With Project Conditions* includes: Add a second Westbound Left Turn Lane.

TABLE 2

Trip Generation
16023-16223 Arrow Hwy

Land Use	ITE Code	Units	Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out
Trip Generation Rates:							
-Warehouse	150	per TSF	3.56	0.24	0.16	0.08	0.24
-Warehouse	150	per Employee	3.89	0.37	0.14	0.21	0.38
-Manufacturing	140	per TSF	3.82	0.57	0.16	0.26	0.47
-Office	710	per TSF	11.03	1.37	0.19	0.25	1.24
-High-Cube Ware/Distrib	152	per TSF	1.68	0.08	0.03	0.04	0.08
- Specialty-Shop Center	826	per TSF	44.32	0.6	0.36	1.19	1.52

Source: Trip Generation, 9th Edition; Institute of Transportation Engineers (ITE); 2012
Notes: Per ITE, warehouse & manf. uses include offices. "High-Cube" = distribution/sig. automation
"ITE Code" is per Trip Generation

Trip Ends Generated:
16203-16223 Arrow Highway (172,000 SF): Project + 4 Alternatives

Project:							
-Warehouse		20,000 SF	70	5	3	2	5
-Manufacturing		88,000 SF	340	50	14	23	41
-Office		25,000 SF	280	34	5	6	31
Subtotal			690	**89**	**22**	31	**77**
Alt. 1:							
-Manufacturing (Distribution, Automated)		133,000 SF	510	76	21	35	63
Alt. 2:							
-Warehouse		133,000SF	470	32	21	11	32
Alt. 3:							
-Warehouse (w Office)		25,000 SF	90	6	4	7	12
-Manufacturing (w Office)		108,000 SF	410	62	17	28	50
Subtotal			500	68	21	**35**	62
Alt. 4:							
- Ware/Distrib Center		120,000SF	200	10	4	5	10
- Ware/Distrib Center	or	80 Employees	310	30	11	17	30
(w/Showroom-Retail)	plus	10,000SF	440	6	4	12	15
Subtotal			**750**	36	15	29	45
Totals			**750**	**89**	**22**	**35**	**77**
FINAL PCE TRIP GENERATION			**1,000**	**119**	**29**	**47**	**103**

Note: The daily & peak Trip Ends generated are rounded to the nearest 10 & 1, respectively
ITE does not define truck trip % for Manf. and % varies by specific user for Ware/Distrib
The 4th Alt.= Ware/Distrib w/ conservative retail assumptions for the showroom .
Bold trip numbers reflect the "worst case" assumptions.
Final Trip Generation values indicate a 33% increase to account for potential truck trips and yield PCE results.

- Some representative site plans were provided by City staff (contained in the **Appendix**) which were assumed to show the types of projects expected. Based on the information provided through the site plans, reasonable land use assumptions were selected to allow a range of possible development transportation impacts that would be addressed by this TIA.

- In order to provide analyses for the widest range of considered land uses the highest trip generation total for each of calculation (i.e., daily, AM inbound, etc.) was selected for use in the intersection analyses which provides a "hybrid" trip generation, which serves to provide environmental traffic analyses for the widest range of likely projects.

- No pass-by trip credits (reductions) were applied to the Project uses (trip generation results) to provide a "worst case" type evaluation.

- In order to provide consistency with the Azusa Canyon TS the conservative trip generation, initial findings were increased by another 33% to account for potential truck trips and yield PCE results.

The trip generation rates and PCE factors were applied to the proposed Project. **Table 2** provides the preliminary and final PCE trip generations for the proposed Project. As shown in **Table 2,** the proposed Project is estimated to generate a total of 1,000 daily trip ends of which 148 (119 In, 29 Out) occur during the AM peak hour and 150 (47 In, 103 Out) occur during the PM peak hour.

Trip Distribution and Assignment

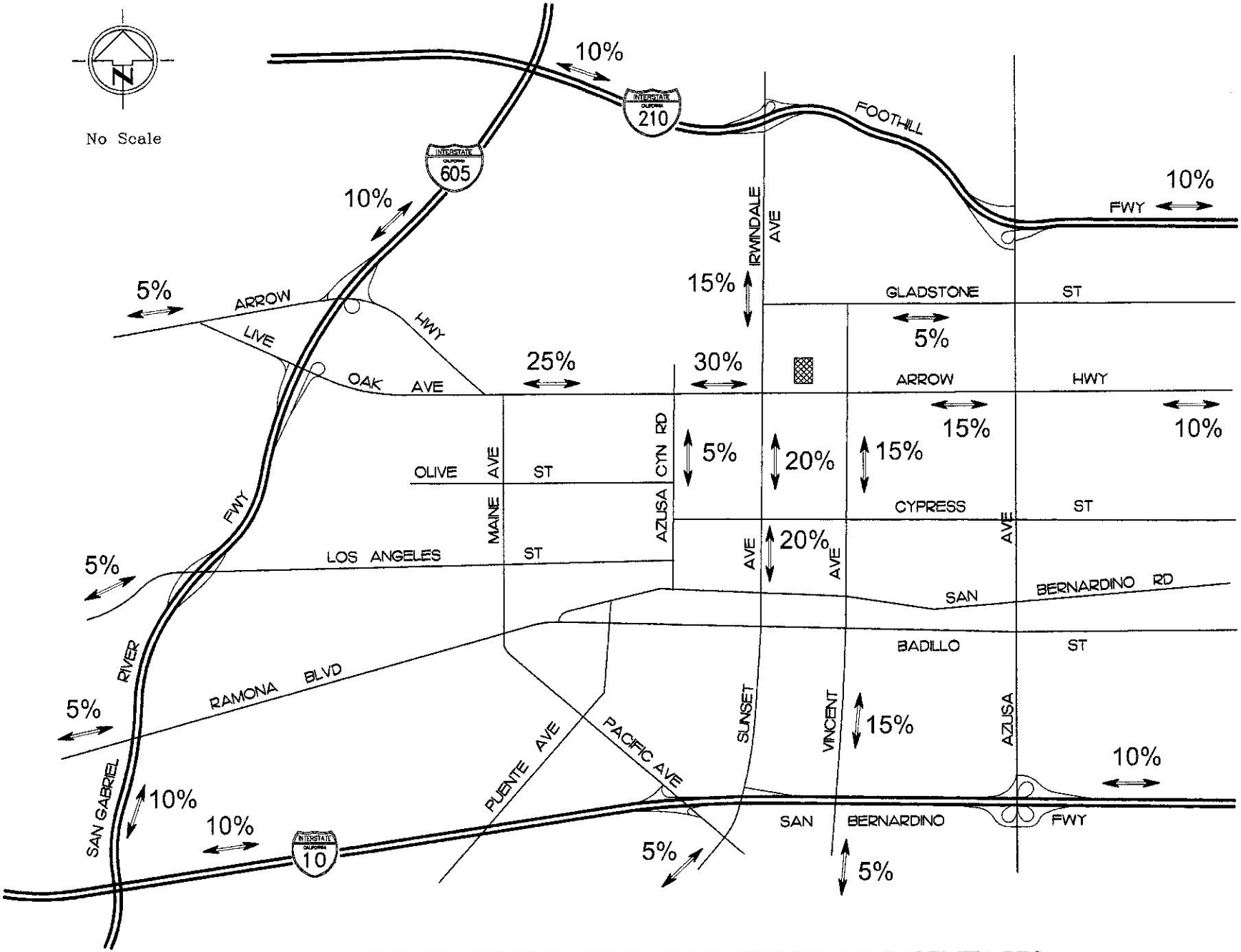
Trip distribution patterns for the proposed Project were developed based upon the type of land uses proposed, potential trip attractors in the area, the surrounding street system, and other pertinent considerations. The geographical trip distribution percentages are shown in **Figure 5**.

The Project trips in **Table 2** were then assigned to the surrounding street system based on the distribution percentages. The trip assignments of the "Project Only" traffic volumes at each study locations are shown on **Figure 6**.

It needs to be noted, these trip assignment analyses were also prepared using "worst case" assumptions providing added flexibility for the eventual project developed. For current roadway conditions along the Project frontage at Arrow Hwy. access will be restricted to right turns only due to the existing raised median. The Project Only volumes in **Figure 6** account for this factor.

However, **Figure 6** also contains added Project traffic assignments assuming full access at a future Project driveway. In other words, for the off-site environmental traffic analyses both right-turn only and full access conditions were considered for the Project driveway(s). This results in "double counting" of Project traffic at the off-site (study) intersection.

The amount of traffic analyzed actually exceeds the trip generation (PCE) totals presented in **Table 2**. The benefits of this approach, a future Project development which uses the current right-turn only conditions at the Project driveway can proceed without further traffic analysis. If



GEOGRAPHICAL TRIP DISTRIBUTION PERCENTAGES

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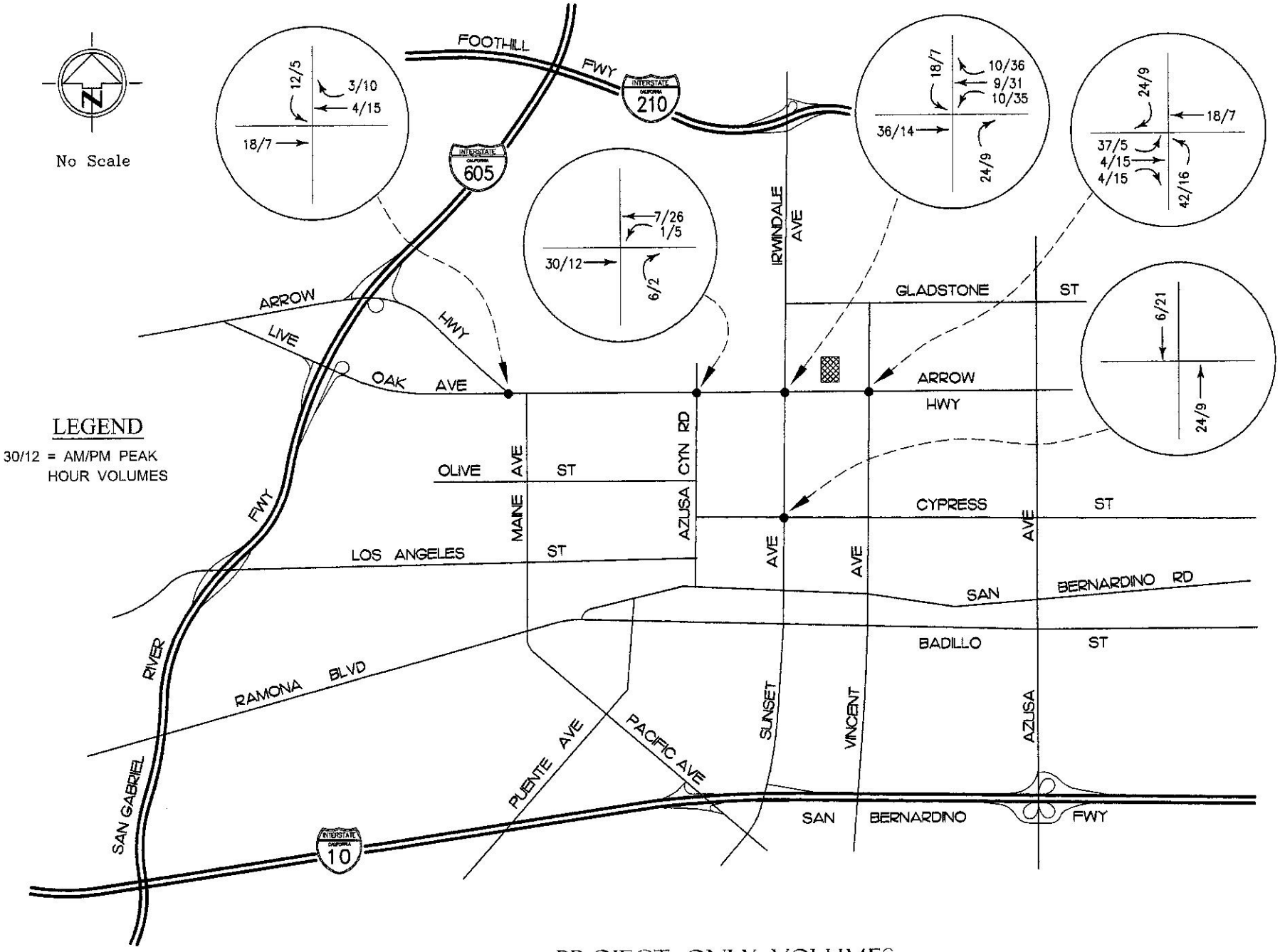
FIGURE 5



PROJECT ONLY VOLUMES

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FIGURE 6

a future Project desires full turn movements at the driveway, it will need to conduct added traffic operational analyses of the driveways to assure it would provide adequate traffic operations, but regarding off-site environmental traffic evaluations, those analyses will have already (also) been addressed by this TIA.

EXISTING + PROJECT CONDITIONS

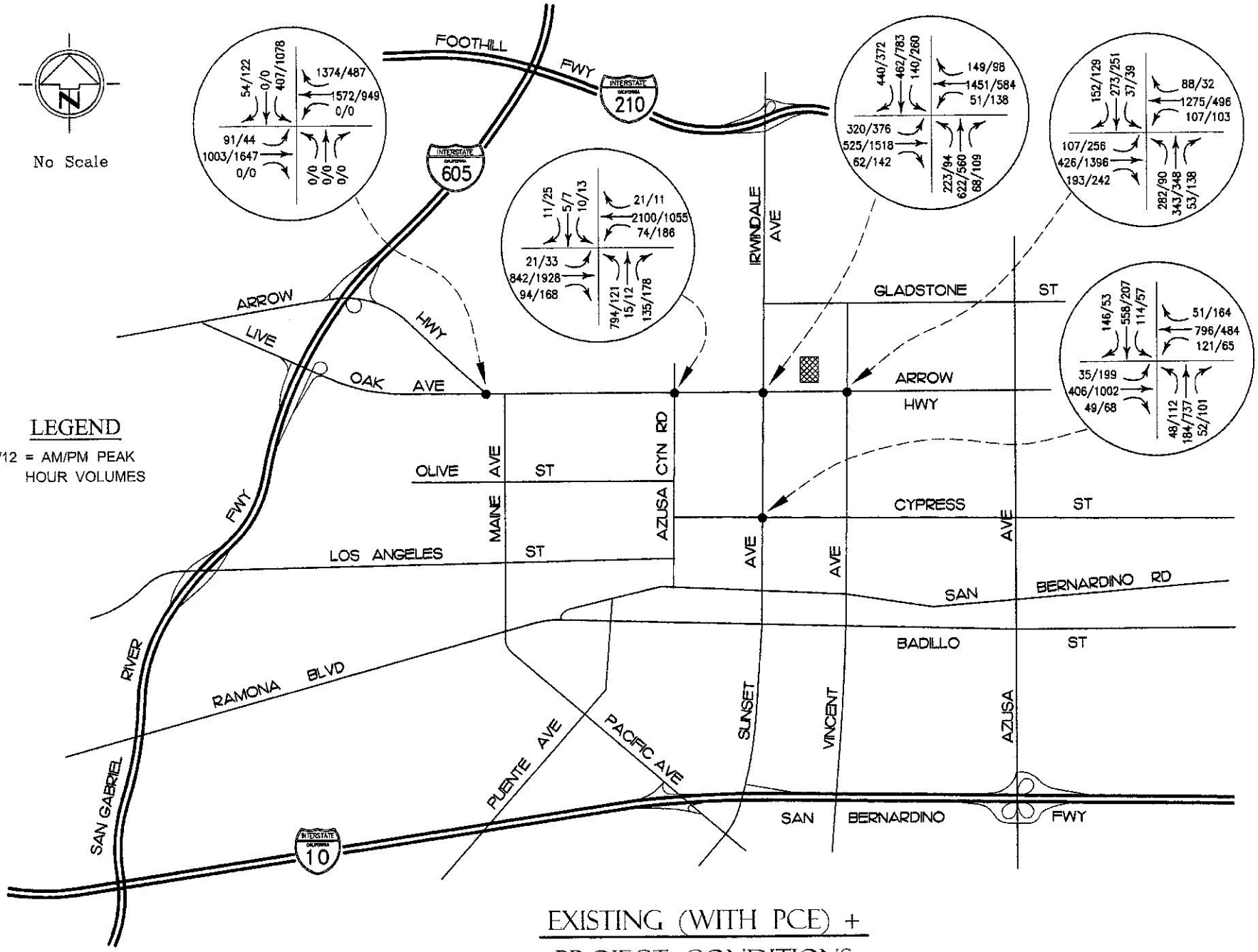
Proposed Project Impacts

The Project generated trips were added to the existing traffic volumes and conditions, so potential Project impacts could be quantified. From a California Environmental Quality Act ("CEQA") perspective the "Existing + Project" conditions have been determined as critical in determination of Project specific impacts.

The City of Irwindale TIA guidelines and practices (which is also consistent with and referenced from the Gibson study) are shown below, and indicate the findings where the Project will have a significant impact.

Intersection Type	Existing or Future Baseline Intersection LOS Conditions	Considered Significant With Project Conditions
Signalized Intersection	Mid-range LOS D or better	E or F
	Mid-range LOS E or better	LOS F
	LOS F	Project adds 50 or more trips
Unsignalized Intersection	Minor stop-controlled approach operates at LOS F and total control delay is less than [a] 4.0 vehicle-hours for single lane approach or 5.0 vehicle lane hours for a multi-lane approach.	Project trips increase total control delay to more than 4.0 vehicle-hours for single lane approach or 5.0 vehicle lane hours for a multi-lane approach.
	Minor stop-controlled approach operates at LOS F and total control delay exceeds 4.0 vehicle-hours for single lane approach or 5.0 vehicle lane hours for a multi-lane approach.	Project adds 50 or more trips.

The "Existing (with PCE) + Project" intersection volumes are illustrated in **Figure 7**. These volumes were evaluated based on the existing lane geometries so specific Project related traffic impacts could be identified. The HCM worksheets which document the calculations and findings are included in the **Appendix**.



EXISTING (WITH PCE) + PROJECT CONDITIONS

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FIGURE 7

The HCM analyses findings for Existing + Project conditions are summarized in **Table 1**. As shown in **Table 1**, all five study intersections maintain their LOS status and therefore, no improvements are needed under Existing + Project conditions.

FUTURE: PRE-PROJECT CONDITIONS (Existing + Ambient Growth + Cumulative Projects)

Analyses of future conditions both with and without the project were conducted at all of the study intersections. As indicated previously, a number of factors were taken into consideration to assure these analyses provide "worst case" evaluations when analyzing the future conditions. The future conditions evaluations include ambient growth and future development projects (cumulative/related projects).

Ambient Growth

The "ambient" traffic growth projections serve to provide "baseline" traffic conditions for a future year, which was assumed to be 2016 to provide a conservative evaluation (without Project considerations). The ambient traffic growth accounts for general traffic increases, as well as potential traffic impacts generated by other projects in the study area that are not specifically identified in the cumulative/related projects list (i.e., smaller projects, those identified after initiation of the analyses, etc.).

The growth factor utilized was 1.0% per year which is conservative given future growth data (e.g., Los Angeles County CMP factors, since there is concurrent inclusion of the cumulative projects as identified below, etc.). The growth factor assumptions are also consistent with the Azusa Canyon TS, as well as were reviewed and accepted by City of Irwindale staff.

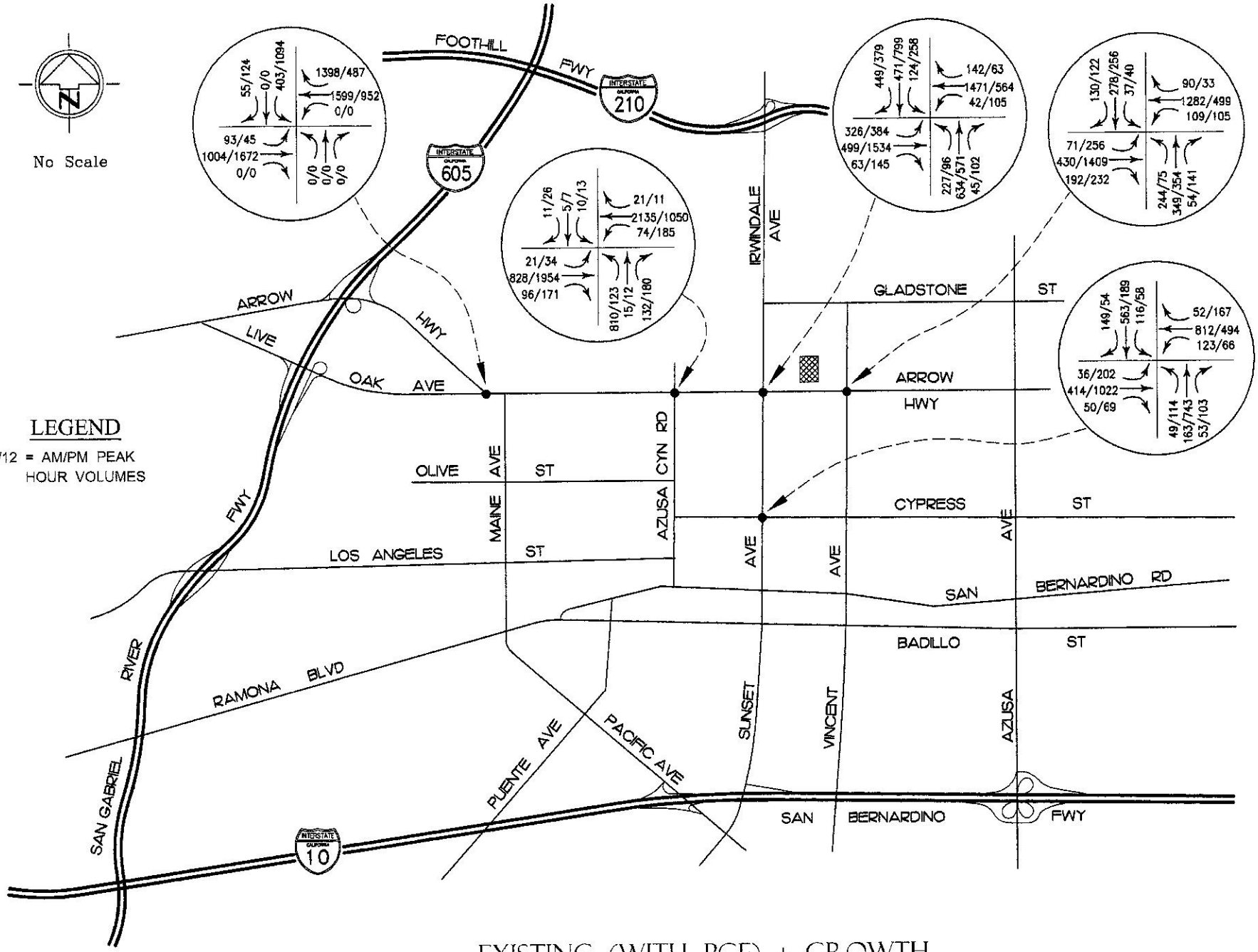
The "Existing (with PCE) + Growth" intersection volumes are illustrated in **Figure 8**.

Cumulative Projects

The list of cumulative projects included in this study is a collection of potential developments that have been provided to us by the City of Irwindale staff (and their information included input from surrounding jurisdictions).

In addition, the City of Irwindale information was compared to the list of related projects included in the Azusa Canyon TS. It was determined the Azusa Canyon TS list of related project was more extensive, so that list and the associated traffic impacts were included in this TIA. Where needed the Azusa Canyon TS related project totals were extrapolated to the study intersections included in this TIA.

Lastly, the City of Irwindale provided scoping traffic information for the upcoming racetrack traffic study. This scoping information contained trip generation and distribution/assignment information sufficient to consider the potential traffic impacts of this upcoming project these analyses. Pertinent copies of data from the Azusa Canyon TS and racetrack scope are included



EXISTING (WITH PCE) + GROWTH

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FIGURE 8

in the **Appendix** for reference purposes.

The trip generation results and trip assignments for each of the cumulative projects were obtained from the various traffic studies for the cumulative project in order to maintain an overall consistency of assumptions and analyses. **Figure 9** provides the cumulative project volumes at the study intersections.

Existing Plus Ambient Growth Plus Cumulative Projects Analysis

The existing volumes were increased with the ambient growth assumptions, then the cumulative project volumes were added so the HCM analyses at each of the study intersections could be updated. These volumes are illustrated in **Figure 10**. The results of the HCM analyses are summarized in **Table 1**. Under Pre-Project conditions, the study intersections of Arrow Highway/Azusa Canyon and Arrow Highway/Irwindale operate at an unacceptable LOS E or F during both the AM and PM peak hours. The remaining three study intersections continue to operate at acceptable Levels of Service during both the AM and PM peak hours. The HCM analyses worksheets are provided in the **Appendix**.

FUTURE: POST-PROJECT CONDITIONS (Pre-Project + Project)

Proposed Project Impacts

The proposed Project trips shown in **Figure 6** were added to the Pre-Project traffic volumes (**Figure 10**), so Post-Project (Pre-Project + Project) conditions could be evaluated. The resulting Post-Project traffic volumes are shown in **Figure 11**, and the HCM analyses were applied to the study intersections. The HCM summary worksheets document the calculations and are included in the **Appendix**.

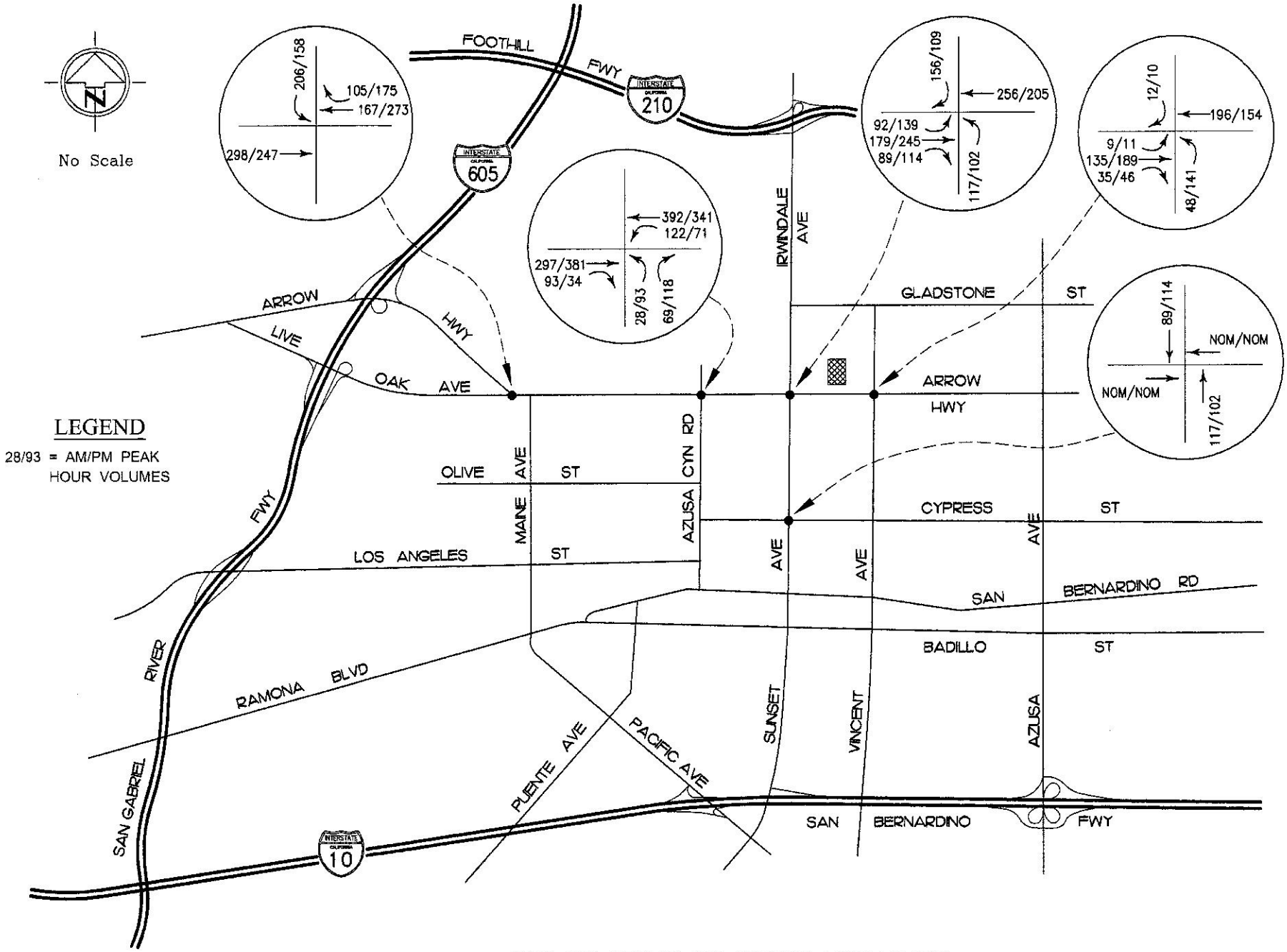
As shown in **Table 1**, the study intersection of Arrow Highway/Azusa Canyon maintains a LOS F during both the AM and PM peak hour. The study intersection of Arrow Highway/Irwindale maintains a LOS F during the AM peak hour but increases from an LOS E to LOS F during the PM peak hour. The remaining three study intersections of Arrow Highway/Live Oak, Arrow Higheway/Vincent and Irwindale/Cypress all maintain an acceptable Level of Service during both the AM and PM peak hours with the project under future conditions. The HCM analyses worksheets are provided in the **Appendix**.

Mitigation Measures

Based on the City's impact criteria, shown earlier in this study, the study intersection of Arrow Highway/Azusa Canyon Road does not add 50 or more project trips to the study intersection, as shown in **Figure 6**, therefore, no mitigation measures are required. The intersection of Arrow Highway/Irwindale, does however, increase from LOS E to LOS F, which based upon the impact criteria would require mitigation.

The following improvements would mitigate the project's impact at the study intersection of Arrow Highway/Irwindale.

- Add a second Westbound left turn lane.



CUMULATIVE PROJECT VOLUMES

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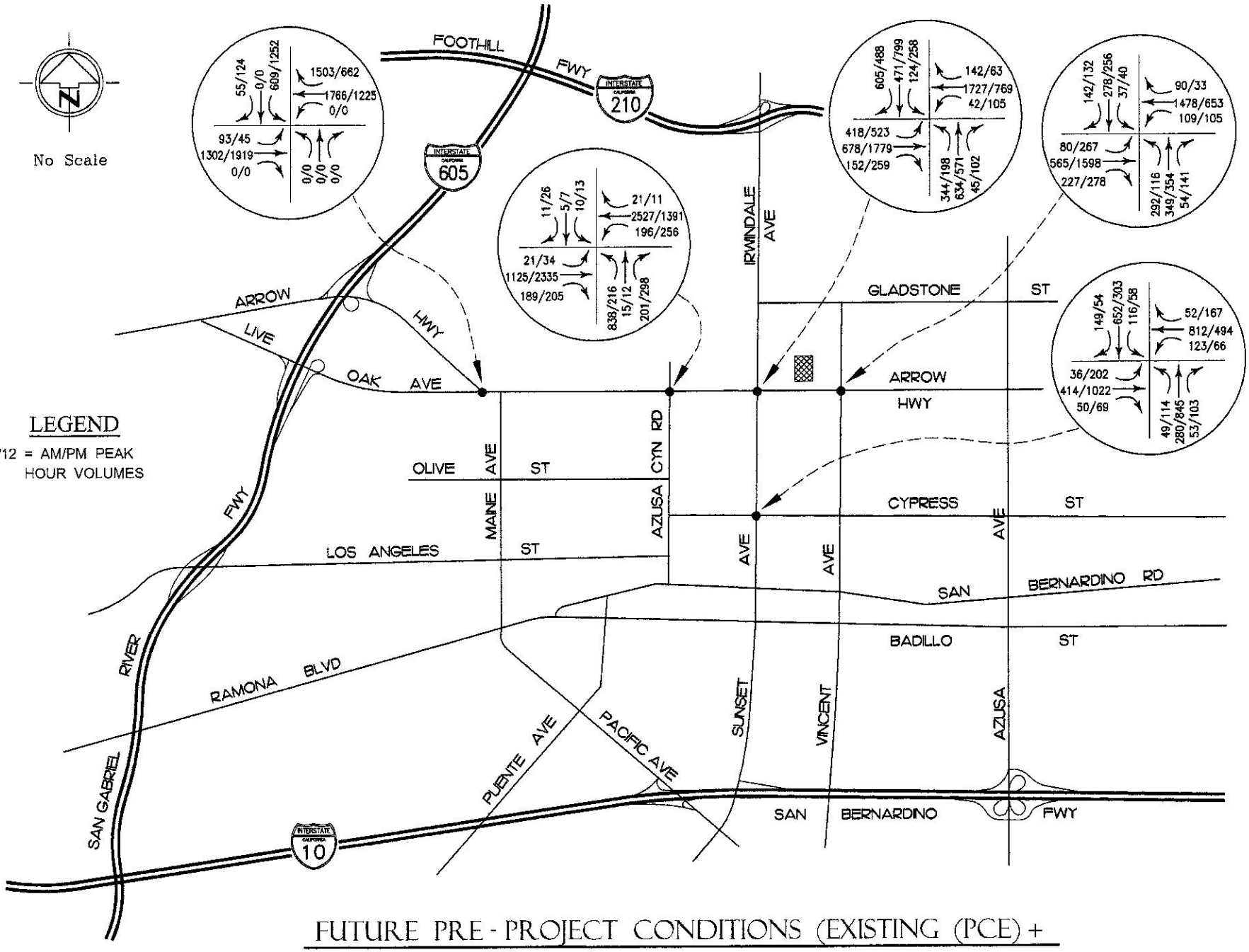
FIGURE 9



FUTURE PRE-PROJECT CONDITIONS (EXISTING (PCE) + AMBIENT GROWTH + CUMULATIVE PROJECTS

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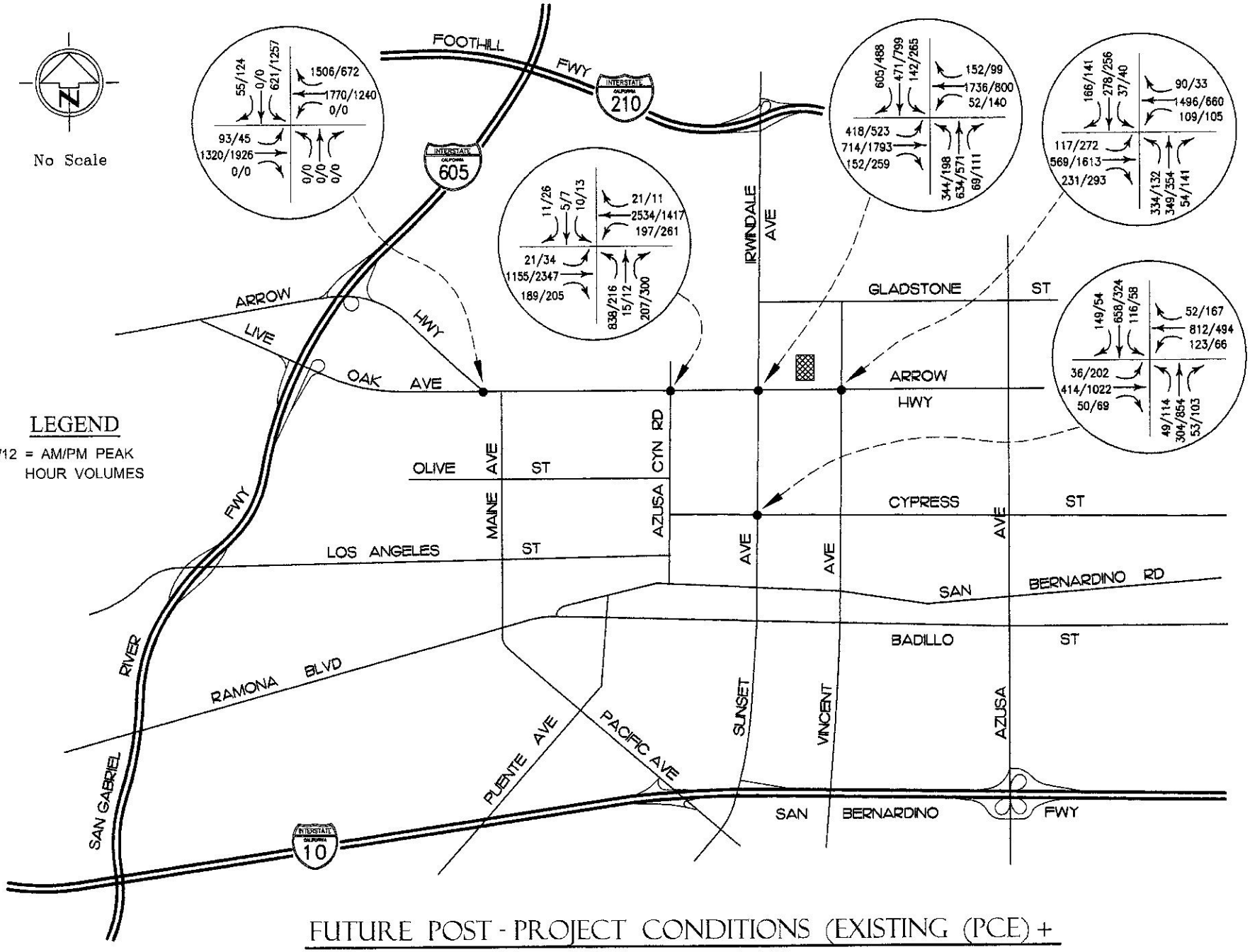
FIGURE 10



FUTURE POST - PROJECT CONDITIONS (EXISTING (PCE) + AMBIENT GROWTH + CUMULATIVE PROJECTS + PROJECT

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FIGURE 11

As shown in **Table 1,** this improvement would improve the LOS during the PM peak hour back to LOS E, or back to pre-project conditions.

Project Fair Share

Based on the City Policy Guidelines, the project fair share at an impacted intersection shall be calculated as the ratio of the project trips over the trips under Existing Plus Project conditions. Therefore, the project fair share is based on what trips they add to the pre-project conditions. The project's fair share contribution to the improvements is calculated below.

Intersection	Mitigation	Existing+Project Volume	Project Volume	Fair Share Percent
Arrow Highway & Irwindale Ave.	Add a second Westbound left turn lane.	AM: 4513 PM: 5034	AM: 107 PM: 132	AM: 2% PM: **3%**

Based on the table above, the project is responsible for 3% of the future improvement at Arrow Highway and Irwindale Avenue.

ACCESS

As mentioned above there is presently a raised median on Arrow Hwy. along the project frontage that will restrict Project driveway movements to right turns only. The example site plans provided (in **Figure 2** and the **Appendix**), show the potential for driveways to be located at various locations along the Project frontage (at Arrow Hwy.) but regardless of the location, only right turns would be allowed under current conditions.

If full access is desired by a specific project that development will need to provide traffic operational analyses to justify modifications to the raised median and assure adequate traffic operations of the driveway would be provided. The traffic analyses for a change to full access, however, should only be needed for the project driveway area, since this TIA has already consider the option for full access, in the off-site, intersection analyses.

CONGESTION MANAGEMENT PROGRAM (CMP) ANALYSIS

With the passage of the gas tax increase (Proposition 111) in June 1990, came a requirement that each urbanized area in the State with a population of 50,000 or more adopt a Congestion Management Program ("CMP"). A program was developed for Los Angeles County, with input from local and regional agencies, and a summary of the efforts was published in the Congestion Management Program for Los Angeles County.

In general, the analyses in this TIA would satisfy the CMP TIA requirements for identification of

Project related impacts. In addition, it is our understanding specific CMP analyses are only required for projects undergoing an Environmental Impact Report ("EIR"), which is not the case for this Project, so no further CMP calculations were required.

SUMMARY

The proposed Project is currently anticipated to have a building size of about 130,000-132,000 square feet (SF) with potential uses to include, manufacturing, warehouse, distribution, showroom and office. The Project is to be located on the north side of Arrow Highway between Irwindale Avenue and Vincent Avenue. Pertinent traffic factors were examined and the potential Project traffic impacts documented. The analyses examined existing, existing + project, future pre-project and post-project conditions. The potential traffic impacts of the Project were evaluated and mitigation/improvement measures were identified. The principal findings of this study are listed below.

1) Under "Existing" conditions, the study intersections of Arrow Highway/Azusa Canyon and Arrow Highway/Irwindale currently operate at an unacceptable LOS E or F during either or both the AM and PM peak hours. The remaining three study intersections of Arrow Highway/Live Oak, Arrow Highway/Vincent and Irwindale/Cypress are currently operating at acceptable Levels of Service during both the AM and PM peak hours.

2) Since a variety of land uses are being considered, the analyses assumptions were selected to provide the most flexibility given the general size and type of project(s) presently anticipated. The trip generation evaluations were developed in conjunction with City of Irwindale staff through submittal of preliminary trip generation summary tables. In general, "worst case" assumptions were used.

3) For "Existing + Project" conditions all five study intersection maintain the same LOS as documented in the Existing Conditions evaluations.

4) The City of Irwindale has significant impact thresholds for evaluating Project traffic impacts. The five study intersections have no significant Project impacts for Existing + Project conditions as shown in **Table 1**.

5) Under "Existing + Ambient Growth + Cumulative" future Pre-Project conditions, the study intersections of Arrow Highway/Azusa Canyon and Arrow Highway/Irwindale operate at an over capacity LOS E or F during both the AM and PM peak hours. The remaining three study intersections continue to operate at acceptable Levels of Service during both the AM and PM peak hours.

6) For Post-Project (Pre-Project + Project) conditions the study intersection of Arrow Highway/Azusa Canyon maintains a LOS F during both the AM and PM peak hour. The study intersection of Arrow Highway/Irwindale maintains a LOS F during the AM peak hour but increases from an LOS E to LOS F during the PM peak hour. The remaining three study intersections of Arrow Highway/Live Oak, Arrow Highway/Vincent and Irwindale/Cypress all maintain an acceptable Level of Service during both the AM and

PM peak hours.

7) Following the City's impact criteria, Arrow Highway/Azusa Canyon Road does not add 50 or more project trips to the study intersection and therefore, no mitigation is required. The project does, however, have an impact at the intersection of Arrow Highway/Irwindale Avenue. Based upon the City of Irwindale's Fair Share criteria, the Project would be responsible for 3% of adding a second westbound left turn at the study intersection of Arrow Highway/Irwindale Avenue.

8) The proposed Project is expected to have right turn only access via Arrow Highway due to a raised median along Arrow Highway. If developers of a specific future project desire to have full access, they will need to provide traffic operational driveway analyses to justify modifications to the existing raised median on Arrow Highway. The operational analyses would need to assure adequate traffic operations of the driveway. The traffic analyses for a change to full access, however, should only be needed for the project driveway area since this TIA has already consider the off-site intersection impacts of a full-access alternative.

We trust that these analyses will be of assistance to you, the City of Irwindale and others. If you have any questions or comments, please do not hesitate to contact us.

Respectfully submitted,
SASAKI TRANSPORTATION SERVICES, INC.

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C52768 & TR1462

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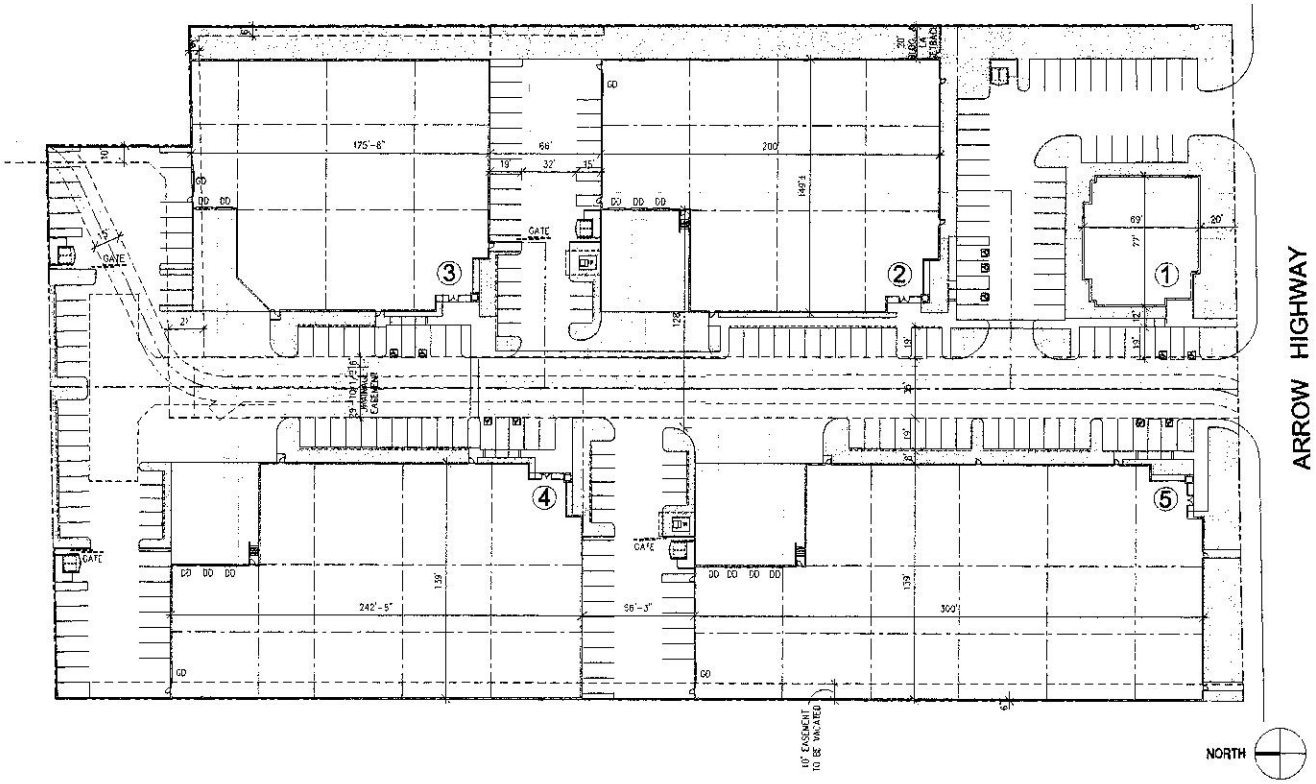
APPENDIX



PROJECT TABULATIONS

Site Area		Bldg 1	Bldg 2	Bldg 3	Bldg 4	Bldg 5	Total
sf		31,360	59,644	52,198	57,382	71,409	272,193
Acres		0.72	1.37	1.20	1.32	1.64	6.25
Building Area					Bldg 3	Bldg 4	Total
Ground Floor Office Area		5,000	2,000	1,000	1,000	2,000	11,000
Warehouse		0	24,300	22,900	29,250	35,450	111,900
Sub-Total Ground Floor SF		5,000	26,300	23,900	30,250	37,450	122,900
Mezzanine (Office)		5,000	1,000	1,000	1,000	2,000	10,000
Total Building Area		10,000	27,300	24,900	31,250	39,450	**132,900**
Coverage							45.2%
FAR							48.8%
Landscape Area							
Required	10%						27,219
Provided	12.1%						32,950
Parking Requirements	Parking Ratio						Total
Office	1/250	40	12	8	8	16	
Warehouse Use							
0 to 20,000 sf	1/1000		20	20	20	20	
20,000 to 40,000 sf	1/2000		2	1	5	8	
40,000 sf +	1/4000		0	0	0	0	
Sub-Total		0	22	21	25	28	
Parking Required		**40**	**34**	**29**	**33**	**44**	**180**
Parking Provided							
HC Accessible		2	3	2	2	2	11
Standard (9'x19')		32	28	25	35	32	152
Compact (8'x15')		7	10	6	5	10	38
Total		41	41	33	42	44	201
Compact % (25% allowed)		17%	24%	18%	12%	23%	19%
Parking Ratio		4.10	1.50	1.33	1.34	1.12	1.51
Truck Doors							Total
Dock Doors		0	3	2	3	4	9
Grade Doors		0	1	1	1	1	3

16203 ARROW HIGHWAY, IRWINDALE CA

PANATTONI DEVELOPMENT COMPANY, INC.

4 INDUSTRAIL AND 1 OFFICE BUILDING
CONCEPTUAL SITE PLAN

0 30 60

PROJECT NO.: PAN10101
DATE: 08/07/2014

NOTE: LAND AREA AND BUILDING SQUARE FOOTAGE ARE PRELIMINARY AND MAY BE SUBJECT TO CHANGE UPON REVIEW BY GOVERNING AGENCIES, CIVIL ENGINEER, AND OWNER.

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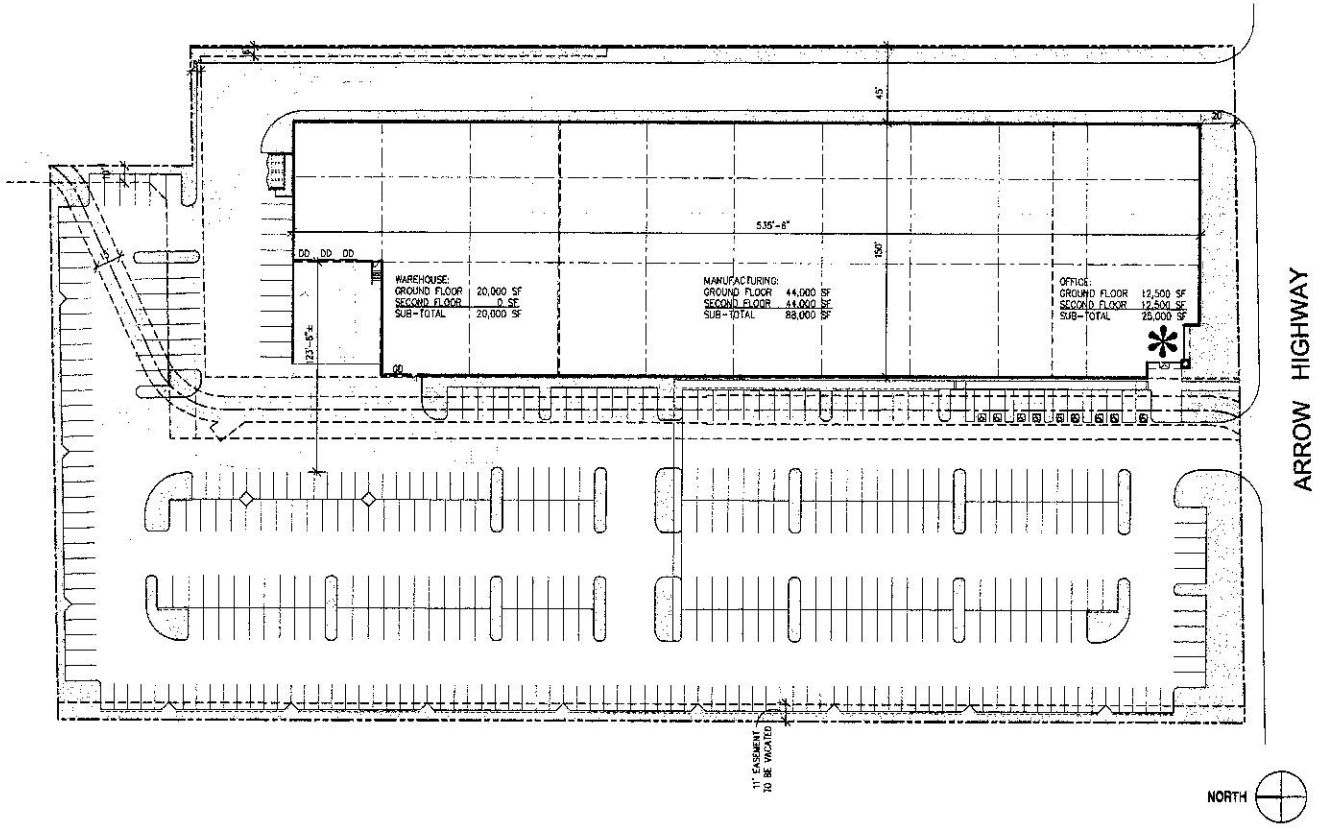

PROJECT TABULATIONS

Site Area			Total
sf	91,203		272,192
Acres	2.09		6.25

Building Area	1st Floor	2nd Floor	Total
Office	12,500	12,500	25,000
Manufacturing	44,000	44,000	88,000
Warehouse	20,000	0	20,000
Total Building Area	76,500	56,500	**133,000**

Coverage	28.1%
FAR	48.9%

Landscape Area		
Required	10%	27,219
Provided	12.4%	33,800

Parking Requirements	Parking Ratio	Total
Office	1/250	100
Manufacturing Use		
0 to 10,000 sf	1/350	29
10,000 to 50,000 sf	1/500	80
50,000 to 100,000 sf	1/1000	38
		147
Warehouse Use		
0 to 20,000 sf	1/1000	20
20,000 to 40,000 sf	1/2000	0
40,000 sf +	1/4000	0
Sub-Total		20
Parking Required		**287**

Parking Provided	
HC Accessible	9
Standard (9'x19')	294
Compact (8'x15')	101
Total	**404**
Compact % (25% allowed)	25%

Parking Ratio	3/1000

Truck Doors	
Dock Doors	3
Grade Doors	1

16203 ARROW HIGHWAY, IRWINDALE CA

PANATTONI DEVELOPMENT COMPANY, INC.

SINGLE BUILDING
CONCEPTUAL SITE PLAN

0 30 60

PROJECT NO: PANO0106
DATE: 9-10-04

NOTE: LAND AREA AND BUILDING SQUARE FOOTAGE ARE PRELIMINARY AND MAY BE SUBJECT TO CHANGE UPON REVIEW BY COVERNING AGENCIES, CIVIL ENGINEER, AND OWNER.

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City of Buena Park
N/S: Arrow Highway
E/W: Live Oak Avenue / Arrow Highway
Weather: Clear

File Name : BPKARLOAM
Site Code : 01414253
Start Date : 7/9/2014
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Arrow Highway Southbound			Arrow Highway Westbound			Live Oak Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
07:00 AM	47	6	53	322	297	619	14	140	154	826
07:15 AM	61	6	67	307	368	675	19	154	173	915
07:30 AM	76	8	84	295	321	616	24	146	170	870
07:45 AM	76	10	86	312	348	660	22	182	204	950
Total	260	30	290	1236	1334	2570	79	622	701	3561
08:00 AM	95	19	114	256	267	523	14	177	191	828
08:15 AM	78	18	96	260	234	494	14	197	211	801
08:30 AM	83	13	96	212	197	409	17	136	153	658
08:45 AM	85	14	99	195	205	400	16	139	155	654
Total	341	64	405	923	903	1826	61	649	710	2941
Grand Total	601	94	695	2159	2237	4396	140	1271	1411	6502
Apprch %	86.5	13.5		49.1	50.9		9.9	90.1		
Total %	9.2	1.4	10.7	33.2	34.4	67.6	2.2	19.5	21.7	
Passenger Vehicles	545	83	628	1955	2174	4129	136	1117	1253	6010
% Passenger Vehicles	90.7	88.3	90.4	90.6	97.2	93.9	97.1	87.9	88.8	92.4
Large 2 Axle Vehicles	38	9	47	78	48	126	2	68	70	243
% Large 2 Axle Vehicles	6.3	9.6	6.8	3.6	2.1	2.9	1.4	5.4	5	3.7
3 Axle Vehicles	2	2	4	50	6	56	0	22	22	82
% 3 Axle Vehicles	0.3	2.1	0.6	2.3	0.3	1.3	0	1.7	1.6	1.3
4+ Axle Trucks	16	0	16	76	9	85	2	64	66	167
% 4+ Axle Trucks	2.7	0	2.3	3.5	0.4	1.9	1.4	5	4.7	2.6

	Arrow Highway Southbound			Arrow Highway Westbound			Live Oak Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	61	6	67	307	**368**	**675**	19	154	173	915
07:30 AM	76	8	84	295	321	616	**24**	146	170	870
07:45 AM	76	10	86	**312**	348	660	22	**182**	**204**	**950**
08:00 AM	**95**	**19**	**114**	256	267	523	14	177	191	828
Total Volume	308	43	351	1170	1304	2474	79	659	738	3563
% App. Total	87.7	12.3		47.3	52.7		10.7	89.3		
PHF	.811	.566	.770	.938	.886	.916	.823	.905	.904	.938

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File Name : BPKARLOAM
Site Code : 01414253
Start Date : 7/9/2014
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Groups Printed- Passenger Vehicles

	Arrow Highway Southbound			Arrow Highway Westbound			Live Oak Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Factor	1.0	1.0		1.0	1.0		1.0	1.0		
07:00 AM	40	6	46	296	285	581	14	117	131	758
07:15 AM	56	6	62	284	355	639	18	138	156	857
07:30 AM	68	5	73	273	316	589	24	132	156	818
07:45 AM	70	9	79	292	340	632	22	162	184	895
Total	234	26	260	1145	1296	2441	78	549	627	3328
08:00 AM	83	17	100	229	258	487	12	152	164	751
08:15 AM	74	16	90	233	228	461	14	183	197	748
08:30 AM	74	11	85	177	190	367	16	114	130	582
08:45 AM	80	13	93	171	202	373	16	119	135	601
Total	311	57	368	810	878	1688	58	568	626	2682
Grand Total	545	83	628	1955	2174	4129	136	1117	1253	6010
Apprch %	86.8	13.2		47.3	52.7		10.9	89.1		
Total %	9.1	1.4	10.4	32.5	36.2	68.7	2.3	18.6	20.8	

	Arrow Highway Southbound			Arrow Highway Westbound			Live Oak Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	56	6	62	284	**355**	**639**	18	138	156	857
07:30 AM	68	5	73	273	316	589	**24**	132	156	818
07:45 AM	70	9	79	**292**	340	632	22	**162**	**184**	**895**
08:00 AM	**83**	**17**	**100**	229	258	487	12	152	164	751
Total Volume	277	37	314	1078	1269	2347	76	584	660	3321
% App. Total	88.2	11.8		45.9	54.1		11.5	88.5		
PHF	.834	.544	.785	.923	.894	.918	.792	.901	.897	.928

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City of Buena Park
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File Name : BPKARLOAM
Site Code : 01414253
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Groups Printed- Large 2 Axle Vehicles

	Arrow Highway Southbound			Arrow Highway Westbound			Live Oak Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Factor	1.5	1.5		1.5	1.5		1.5	1.5		
07:00 AM	4	0	4	15	6	21	0	21	21	46
07:15 AM	6	0	6	15	15	30	2	12	14	50
07:30 AM	10	3	13	8	8	16	0	8	8	37
07:45 AM	8	0	8	14	10	24	0	15	15	47
Total	28	3	31	52	39	91	2	56	58	180
08:00 AM	10	3	13	15	14	29	2	16	18	60
08:15 AM	3	3	6	16	8	24	0	9	9	39
08:30 AM	10	3	13	20	8	28	0	10	10	51
08:45 AM	4	2	6	15	4	19	0	10	10	35
Total	27	11	38	66	34	100	2	45	47	185
Grand Total	55	14	69	118	73	191	4	101	105	365
Apprch %	79.7	20.3		61.8	38.2		3.8	96.2		
Total %	15.1	3.8	18.9	32.3	20	52.3	1.1	27.7	28.8	

	Arrow Highway Southbound			Arrow Highway Westbound			Live Oak Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	6	0	6	**15**	**15**	**30**	**2**	12	14	50
07:30 AM	**10**	**3**	**13**	8	8	16	0	8	8	37
07:45 AM	8	0	8	14	10	24	0	15	15	47
08:00 AM	10	3	13	15	14	29	2	**16**	**18**	**60**
Total Volume	34	6	40	52	47	99	4	51	55	194
% App. Total	85	15		52.5	47.5		7.3	92.7		
PHF	.850	.500	.769	.867	.783	.825	.500	.797	.764	.808

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File Name : BPKARLOAM
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Groups Printed- 3 Axle Vehicles

	Arrow Highway Southbound			Arrow Highway Westbound			Live Oak Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Factor	2.0	2.0		2.0	2.0		2.0	2.0		
07:00 AM	0	0	0	16	10	26	0	8	8	34
07:15 AM	0	0	0	12	2	14	0	0	0	14
07:30 AM	0	2	2	18	0	18	0	8	8	28
07:45 AM	2	2	4	10	0	10	0	6	6	20
Total	2	4	6	56	12	68	0	22	22	96
08:00 AM	0	0	0	4	0	4	0	4	4	8
08:15 AM	0	0	0	14	0	14	0	2	2	16
08:30 AM	0	0	0	14	0	14	0	6	6	20
08:45 AM	2	0	2	12	0	12	0	10	10	24
Total	2	0	2	44	0	44	0	22	22	68
Grand Total	4	4	8	100	12	112	0	44	44	164
Apprch %	50	50		89.3	10.7		0	100		
Total %	2.4	2.4	4.9	61	7.3	68.3	0	26.8	26.8	

	Arrow Highway Southbound			Arrow Highway Westbound			Live Oak Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	0	0	0	12	**2**	14	0	0	0	14
07:30 AM	**0**	**2**	2	**18**	0	**18**	0	**8**	**8**	**28**
07:45 AM	**2**	2	**4**	10	0	10	0	6	6	20
08:00 AM	0	0	0	**4**	0	4	0	4	4	8
Total Volume	2	4	6	44	2	46	0	18	18	70
% App. Total	33.3	66.7		95.7	4.3		0	100		
PHF	.250	.500	.375	.611	.250	.639	.000	.563	.563	.625

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File Name : BPKARLOAM
Site Code : 01414253
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Groups Printed- 4+ Axle Trucks

	Arrow Highway Southbound			Arrow Highway Westbound			Live Oak Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Factor	3.0	3.0		3.0	3.0		3.0	3.0		
07:00 AM	12	0	12	24	9	33	0	15	15	60
07:15 AM	3	0	3	21	6	27	0	24	24	54
07:30 AM	3	0	3	24	0	24	0	15	15	42
07:45 AM	0	0	0	18	3	21	0	21	21	42
Total	18	0	18	87	18	105	0	75	75	198
08:00 AM	15	0	15	45	0	45	3	36	39	99
08:15 AM	6	0	6	27	3	30	0	21	21	57
08:30 AM	6	0	6	45	6	51	3	36	39	96
08:45 AM	3	0	3	24	0	24	0	24	24	51
Total	30	0	30	141	9	150	6	117	123	303
Grand Total	48	0	48	228	27	255	6	192	198	501
Apprch %	100	0		89.4	10.6		3	97		
Total %	9.6	0	9.6	45.5	5.4	50.9	1.2	38.3	39.5	

	Arrow Highway Southbound			Arrow Highway Westbound			Live Oak Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	3	0	3	21	6	27	0	24	24	54
07:30 AM	3	0	3	24	0	24	0	15	15	42
07:45 AM	0	0	0	18	3	21	0	21	21	42
08:00 AM	**15**	0	**15**	**45**	0	**45**	**3**	**36**	**39**	**99**
Total Volume	21	0	21	108	9	117	3	96	99	237
% App. Total	100	0		92.3	7.7		3	97		
PHF	.350	.000	.350	.600	.375	.650	.250	.667	.635	.598

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City of Buena Park
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Weather: Clear

File Name : BPKARLOPM
Site Code : 01414253
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Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Arrow Highway Southbound			Arrow Highway Westbound			Live Oak Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
04:00 PM	215	31	246	202	112	314	9	272	281	841
04:15 PM	197	24	221	183	96	279	14	333	347	847
04:30 PM	218	24	242	197	114	311	13	357	370	923
04:45 PM	238	23	261	163	95	258	10	350	360	879
Total	868	102	970	745	417	1162	46	1312	1358	3490
05:00 PM	257	29	286	226	125	351	8	364	372	1009
05:15 PM	246	29	275	207	104	311	8	373	381	967
05:30 PM	241	31	272	168	116	284	18	383	401	957
05:45 PM	216	19	235	158	100	258	9	366	375	868
Total	960	108	1068	759	445	1204	43	1486	1529	3801
Grand Total	1828	210	2038	1504	862	2366	89	2798	2887	7291
Apprch %	89.7	10.3		63.6	36.4		3.1	96.9		
Total %	25.1	2.9	28	20.6	11.8	32.5	1.2	38.4	39.6	
Passenger Vehicles	1762	207	1969	1390	815	2205	87	2662	2749	6923
% Passenger Vehicles	96.4	98.6	96.6	92.4	94.5	93.2	97.8	95.1	95.2	95
Large 2 Axle Vehicles	25	2	27	48	18	66	1	68	69	162
% Large 2 Axle Vehicles	1.4	1	1.3	3.2	2.1	2.8	1.1	2.4	2.4	2.2
3 Axle Vehicles	22	0	22	34	18	52	0	43	43	117
% 3 Axle Vehicles	1.2	0	1.1	2.3	2.1	2.2	0	1.5	1.5	1.6
4+ Axle Trucks	19	1	20	32	11	43	1	25	26	89
% 4+ Axle Trucks	1	0.5	1	2.1	1.3	1.8	1.1	0.9	0.9	1.2

	Arrow Highway Southbound			Arrow Highway Westbound			Live Oak Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	238	23	261	163	95	258	10	350	360	879
05:00 PM	**257**	29	**286**	**226**	**125**	**351**	8	364	372	**1009**
05:15 PM	246	29	275	207	104	311	8	373	381	967
05:30 PM	241	**31**	272	168	116	284	**18**	**383**	**401**	957
Total Volume	982	112	1094	764	440	1204	44	1470	1514	3812
% App. Total	89.8	10.2		63.5	36.5		2.9	97.1		
PHF	.955	.903	.956	.845	.880	.858	.611	.960	.944	.944

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File Name : BPKARLOPM
Site Code : 01414253
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Groups Printed- Passenger Vehicles

	Arrow Highway Southbound			Arrow Highway Westbound			Live Oak Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Factor	1.0	1.0		1.0	1.0		1.0	1.0		
04:00 PM	202	31	233	181	100	281	9	251	260	774
04:15 PM	183	24	207	158	85	243	13	315	328	778
04:30 PM	209	23	232	183	109	292	12	333	345	869
04:45 PM	231	22	253	147	94	241	10	334	344	838
Total	825	100	925	669	388	1057	44	1233	1277	3259
05:00 PM	250	28	278	217	118	335	8	347	355	968
05:15 PM	239	29	268	196	101	297	8	356	364	929
05:30 PM	236	31	267	160	112	272	18	374	392	931
05:45 PM	212	19	231	148	96	244	9	352	361	836
Total	937	107	1044	721	427	1148	43	1429	1472	3664
Grand Total	1762	207	1969	1390	815	2205	87	2662	2749	6923
Apprch %	89.5	10.5		63	37		3.2	96.8		
Total %	25.5	3	28.4	20.1	11.8	31.9	1.3	38.5	39.7	

	Arrow Highway Southbound			Arrow Highway Westbound			Live Oak Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	231	22	253	147	94	241	10	334	344	838
05:00 PM	**250**	28	**278**	**217**	**118**	**335**	8	347	355	**968**
05:15 PM	239	29	268	196	101	297	8	356	364	929
05:30 PM	236	**31**	267	160	112	272	**18**	**374**	**392**	931
Total Volume	956	110	1066	720	425	1145	44	1411	1455	3666
% App. Total	89.7	10.3		62.9	37.1		3	97		
PHF	.956	.887	.959	.829	.900	.854	.611	.943	.928	.947

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City of Buena Park
N/S: Arrow Highway
E/W: Live Oak Avenue / Arrow Highway
Weather: Clear

File Name : BPKARLOPM
Site Code : 01414253
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Groups Printed- Large 2 Axle Vehicles

	Arrow Highway Southbound			Arrow Highway Westbound			Live Oak Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Factor	1.5	1.5		1.5	1.5		1.5	1.5		
04:00 PM	10	0	10	8	8	16	0	16	16	42
04:15 PM	9	0	9	12	8	20	2	10	12	41
04:30 PM	2	2	4	14	4	18	0	22	22	44
04:45 PM	3	0	3	12	0	12	0	15	15	30
Total	24	2	26	46	20	66	2	63	65	157
05:00 PM	6	2	8	6	3	9	0	12	12	29
05:15 PM	3	0	3	8	3	11	0	12	12	26
05:30 PM	3	0	3	3	2	5	0	6	6	14
05:45 PM	2	0	2	10	0	10	0	8	8	20
Total	14	2	16	27	8	35	0	38	38	89
Grand Total	38	4	42	73	28	101	2	101	103	246
Apprch %	90.5	9.5		72.3	27.7		1.9	98.1		
Total %	15.4	1.6	17.1	29.7	11.4	41.1	0.8	41.1	41.9	

	Arrow Highway Southbound			Arrow Highway Westbound			Live Oak Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	3	0	3	**12**	0	**12**	0	**15**	**15**	**30**
05:00 PM	**6**	**2**	**8**	6	**3**	9	0	12	12	29
05:15 PM	3	0	3	8	3	11	0	12	12	26
05:30 PM	3	0	3	3	2	5	0	6	6	14
Total Volume	15	2	17	29	8	37	0	45	45	99
% App. Total	88.2	11.8		78.4	21.6		0	100		
PHF	.625	.250	.531	.604	.667	.771	.000	.750	.750	.825

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Groups Printed- 3 Axle Vehicles

	Arrow Highway Southbound			Arrow Highway Westbound			Live Oak Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Factor	2.0	2.0		2.0	2.0		2.0	2.0		
04:00 PM	4	0	4	18	6	24	0	10	10	38
04:15 PM	10	0	10	20	0	20	0	12	12	42
04:30 PM	8	0	8	2	2	4	0	10	10	22
04:45 PM	6	0	6	8	2	10	0	10	10	26
Total	28	0	28	48	10	58	0	42	42	128
05:00 PM	6	0	6	0	10	10	0	14	14	30
05:15 PM	4	0	4	4	2	6	0	6	6	16
05:30 PM	4	0	4	10	6	16	0	10	10	30
05:45 PM	2	0	2	6	8	14	0	14	14	30
Total	16	0	16	20	26	46	0	44	44	106
Grand Total	44	0	44	68	36	104	0	86	86	234
Apprch %	100	0		65.4	34.6		0	100		
Total %	18.8	0	18.8	29.1	15.4	44.4	0	36.8	36.8	

	Arrow Highway Southbound			Arrow Highway Westbound			Live Oak Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	**6**	0	**6**	8	2	10	0	10	10	26
05:00 PM	6	0	6	0	**10**	10	0	**14**	**14**	**30**
05:15 PM	4	0	4	4	2	6	0	6	6	16
05:30 PM	4	0	4	**10**	6	**16**	0	10	10	30
Total Volume	20	0	20	22	20	42	0	40	40	102
% App. Total	100	0		52.4	47.6		0	100		
PHF	.833	.000	.833	.550	.500	.656	.000	.714	.714	.850

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Groups Printed- 4+ Axle Trucks

	Arrow Highway Southbound			Arrow Highway Westbound			Live Oak Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Factor	3.0	3.0		3.0	3.0		3.0	3.0		
04:00 PM	12	0	12	21	12	33	0	15	15	60
04:15 PM	9	0	9	21	18	39	0	15	15	63
04:30 PM	12	0	12	12	3	15	3	12	15	42
04:45 PM	6	3	9	12	0	12	0	3	3	24
Total	39	3	42	66	33	99	3	45	48	189
05:00 PM	0	0	0	15	0	15	0	6	6	21
05:15 PM	9	0	9	12	0	12	0	18	18	39
05:30 PM	3	0	3	3	0	3	0	0	0	6
05:45 PM	6	0	6	0	0	0	0	6	6	12
Total	18	0	18	30	0	30	0	30	30	78
Grand Total	57	3	60	96	33	129	3	75	78	267
Apprch %	95	5		74.4	25.6		3.8	96.2		
Total %	21.3	1.1	22.5	36	12.4	48.3	1.1	28.1	29.2	

	Arrow Highway Southbound			Arrow Highway Westbound			Live Oak Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	6	**3**	**9**	12	0	12	0	3	3	24
05:00 PM	0	0	0	**15**	0	**15**	0	6	6	21
05:15 PM	**9**	0	9	12	0	12	0	**18**	**18**	**39**
05:30 PM	3	0	3	3	0	3	0	0	0	6
Total Volume	18	3	21	42	0	42	0	27	27	90
% App. Total	85.7	14.3		100	0		0	100		
PHF	.500	.250	.583	.700	.000	.700	.000	.375	.375	.577

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City of Irwindale
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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Irwindale Avenue Southbound				Arrow Highway Westbound				Irwindale Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	9	92	96	197	9	295	27	331	48	135	6	189	54	90	10	154	871
07:15 AM	11	68	80	159	10	250	34	294	48	128	7	183	64	79	17	160	796
07:30 AM	12	110	102	224	10	290	32	332	46	146	6	198	73	101	13	187	941
07:45 AM	21	122	99	242	15	243	35	293	64	142	7	213	77	101	14	192	940
Total	53	392	377	822	44	1078	128	1250	206	551	26	783	268	371	54	693	3548
08:00 AM	16	83	84	183	16	251	22	289	45	104	7	156	75	92	10	177	805
08:15 AM	15	118	89	222	13	235	17	265	31	100	10	141	81	91	16	188	816
08:30 AM	18	126	93	237	20	183	30	233	41	118	11	170	79	83	10	172	812
08:45 AM	23	116	76	215	20	191	27	238	32	106	5	143	67	85	13	165	761
Total	72	443	342	857	69	860	96	1025	149	428	33	610	302	351	49	702	3194
Grand Total	125	835	719	1679	113	1938	224	2275	355	979	59	1393	570	722	103	1395	6742
Apprch %	7.4	49.7	42.8		5	85.2	9.8		25.5	70.3	4.2		40.9	51.8	7.4		
Total %	1.9	12.4	10.7	24.9	1.7	28.7	3.3	33.7	5.3	14.5	0.9	20.7	8.5	10.7	1.5	20.7	
Passenger Vehicles	113	808	648	1569	106	1822	215	2143	348	947	58	1353	509	621	98	1228	6293
% Passenger Vehicles	90.4	96.8	90.1	93.4	93.8	94	96	94.2	98	96.7	98.3	97.1	89.3	86	95.1	88	93.3
Large 2 Axle Vehicles	6	23	30	59	5	51	6	62	3	22	1	26	30	50	3	83	230
% Large 2 Axle Vehicles	4.8	2.8	4.2	3.5	4.4	2.6	2.7	2.7	0.8	2.2	1.7	1.9	5.3	6.9	2.9	5.9	3.4
3 Axle Vehicles	0	0	15	15	1	28	2	31	0	2	0	2	19	17	1	37	85
% 3 Axle Vehicles	0	0	2.1	0.9	0.9	1.4	0.9	1.4	0	0.2	0	0.1	3.3	2.4	1	2.7	1.3
4+ Axle Trucks	6	4	26	36	1	37	1	39	4	8	0	12	12	34	1	47	134
% 4+ Axle Trucks	4.8	0.5	3.6	2.1	0.9	1.9	0.4	1.7	1.1	0.8	0	0.9	2.1	4.7	1	3.4	2

	Irwindale Avenue Southbound				Arrow Highway Westbound				Irwindale Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	9	92	96	197	9	**295**	27	331	48	135	6	189	54	90	10	154	871
07:15 AM	11	68	80	159	10	250	34	294	48	128	7	183	64	79	**17**	160	796
07:30 AM	12	110	**102**	224	10	290	32	**332**	46	**146**	6	198	73	**101**	13	187	**941**
07:45 AM	**21**	**122**	99	**242**	**15**	243	**35**	293	**64**	142	7	**213**	**77**	101	**14**	**192**	940
Total Volume	53	392	377	822	44	1078	128	1250	206	551	26	783	268	371	54	693	3548
% App. Total	6.4	47.7	45.9		3.5	86.2	10.2		26.3	70.4	3.3		38.7	53.5	7.8		
PHF	.631	.803	.924	.849	.733	.914	.914	.941	.805	.943	.929	.919	.870	.918	.794	.902	.943

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City of Irwindale
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Groups Printed- Passenger Vehicles

	Irwindale Avenue Southbound				Arrow Highway Westbound				Irwindale Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
07:00 AM	8	89	86	183	9	284	27	320	46	130	6	182	50	73	9	132	817
07:15 AM	7	65	75	147	9	242	29	280	48	125	6	179	59	65	17	141	747
07:30 AM	11	107	95	213	9	275	32	316	46	139	6	191	67	90	12	169	889
07:45 AM	20	116	90	226	13	230	33	276	62	138	7	207	72	91	12	175	884
Total	46	377	346	769	40	1031	121	1192	202	532	25	759	248	319	50	617	3337
08:00 AM	13	81	75	169	15	237	22	274	43	102	7	152	64	81	9	154	749
08:15 AM	15	115	76	206	12	218	17	247	31	98	10	139	70	79	16	165	757
08:30 AM	18	123	83	224	19	164	28	211	41	114	11	166	68	70	10	148	749
08:45 AM	21	112	68	201	20	172	27	219	31	101	5	137	59	72	13	144	701
Total	67	431	302	800	66	791	94	951	146	415	33	594	261	302	48	611	2956
Grand Total	113	808	648	1569	106	1822	215	2143	348	947	58	1353	509	621	98	1228	6293
Apprch %	7.2	51.5	41.3		4.9	85	10		25.7	70	4.3		41.4	50.6	8		
Total %	1.8	12.8	10.3	24.9	1.7	29	3.4	34.1	5.5	15	0.9	21.5	8.1	9.9	1.6	19.5	

	Irwindale Avenue Southbound				Arrow Highway Westbound				Irwindale Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	8	89	86	183	9	**284**	27	**320**	46	130	6	182	50	73	9	132	817
07:15 AM	7	65	75	147	9	242	29	280	48	125	6	179	59	65	17	141	747
07:30 AM	11	107	**95**	213	9	275	32	316	46	**139**	6	191	67	90	12	169	**889**
07:45 AM	**20**	**116**	90	**226**	**13**	230	**33**	276	**62**	138	**7**	**207**	**72**	**91**	12	**175**	884
Total Volume	46	377	346	769	40	1031	121	1192	202	532	25	759	248	319	50	617	3337
% App. Total	6	49	45		3.4	86.5	10.2		26.6	70.1	3.3		40.2	51.7	8.1		
PHF	.575	.813	.911	.851	.769	.908	.917	.931	.815	.957	.893	.917	.861	.876	.735	.881	.938

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Groups Printed- Large 2 Axle Vehicles

	Irwindale Avenue Southbound				Arrow Highway Westbound				Irwindale Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.5	1.5	1.5		1.5	1.5	1.5		1.5	1.5	1.5		1.5	1.5	1.5		
07:00 AM	2	4	4	10	0	10	0	10	2	4	0	6	3	18	2	23	49
07:15 AM	3	4	6	13	2	6	6	14	0	3	2	5	0	14	0	14	46
07:30 AM	2	3	3	8	0	10	0	10	0	6	0	6	4	8	0	12	36
07:45 AM	2	6	3	11	3	16	2	21	2	6	0	8	6	8	2	16	56
Total	9	17	16	42	5	42	8	55	4	19	2	25	13	48	4	65	187
08:00 AM	2	3	6	11	2	4	0	6	0	3	0	3	9	3	2	14	34
08:15 AM	0	4	9	13	0	14	0	14	0	3	0	3	8	9	0	17	47
08:30 AM	0	3	8	11	2	8	2	12	0	3	0	3	12	9	0	21	47
08:45 AM	0	6	6	12	0	8	0	8	2	4	0	6	3	8	0	11	37
Total	2	16	29	47	4	34	2	40	2	13	0	15	32	29	2	63	165
Grand Total	11	33	45	89	9	76	10	95	6	32	2	40	45	77	6	128	352
Apprch %	12.4	37.1	50.6		9.5	80	10.5		15	80	5		35.2	60.2	4.7		
Total %	3.1	9.4	12.8	25.3	2.6	21.6	2.8	27	1.7	9.1	0.6	11.4	12.8	21.9	1.7	36.4	

	Irwindale Avenue Southbound				Arrow Highway Westbound				Irwindale Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	2	4	4	10	0	10	0	10	2	4	0	6	3	18	2	23	49
07:15 AM	3	4	6	13	2	6	6	14	0	3	2	5	0	14	0	14	46
07:30 AM	2	3	3	8	0	10	0	10	0	6	0	6	4	8	0	12	36
07:45 AM	2	6	3	11	3	16	2	21	2	6	0	8	6	8	2	16	56
Total Volume	9	17	16	42	5	42	8	55	4	19	2	25	13	48	4	65	187
% App. Total	21.4	40.5	38.1		9.1	76.4	14.5		16	76	8		20	73.8	6.2		
PHF	.750	.708	.667	.808	.417	.656	.333	.655	.500	.792	.250	.781	.542	.667	.500	.707	.835

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Groups Printed- 3 Axle Vehicles

	Irwindale Avenue Southbound				Arrow Highway Westbound				Irwindale Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	2.0	2.0	2.0		2.0	2.0	2.0		2.0	2.0	2.0		2.0	2.0	2.0		
07:00 AM	0	0	6	6	0	6	0	6	0	2	0	2	4	4	0	8	22
07:15 AM	0	0	2	2	0	2	2	4	0	0	0	0	10	4	0	14	20
07:30 AM	0	0	6	6	2	6	0	8	0	2	0	2	2	2	2	6	22
07:45 AM	0	0	4	4	0	2	0	2	0	0	0	0	2	2	0	4	10
Total	0	0	18	18	2	16	2	20	0	4	0	4	18	12	2	32	74
08:00 AM	0	0	4	4	0	4	0	4	0	0	0	0	6	4	0	10	18
08:15 AM	0	0	6	6	0	6	0	6	0	0	0	0	8	2	0	10	22
08:30 AM	0	0	2	2	0	14	2	16	0	0	0	0	0	10	0	10	28
08:45 AM	0	0	0	0	0	16	0	16	0	0	0	0	6	6	0	12	28
Total	0	0	12	12	0	40	2	42	0	0	0	0	20	22	0	42	96
Grand Total	0	0	30	30	2	56	4	62	0	4	0	4	38	34	2	74	170
Apprch %	0	0	100		3.2	90.3	6.5		0	100	0		51.4	45.9	2.7		
Total %	0	0	17.6	17.6	1.2	32.9	2.4	36.5	0	2.4	0	2.4	22.4	20	1.2	43.5	

	Irwindale Avenue Southbound				Arrow Highway Westbound				Irwindale Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	**6**	**6**	0	**6**	0	6	0	**2**	0	**2**	4	**4**	0	8	**22**
07:15 AM	0	0	2	2	0	2	**2**	4	0	0	0	0	**10**	4	0	**14**	20
07:30 AM	0	0	6	6	**2**	6	0	**8**	0	2	0	2	2	2	**2**	6	22
07:45 AM	0	0	4	4	0	2	0	2	0	0	0	0	2	2	0	4	10
Total Volume	0	0	18	18	2	16	2	20	0	4	0	4	18	12	2	32	74
% App. Total	0	0	100		10	80	10		0	100	0		56.2	37.5	6.2		
PHF	.000	.000	.750	.750	.250	.667	.250	.625	.000	.500	.000	.500	.450	.750	.250	.571	.841

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City of Irwindale
N/S: Irwindale Avenue
E/W: Arrow Highway
Weather: Clear

File Name : IRWIRARAM
Site Code : 01414253
Start Date : 7/9/2014
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Groups Printed- 4+ Axle Trucks

	Irwindale Avenue Southbound				Arrow Highway Westbound				Irwindale Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0		
07:00 AM	0	0	12	12	0	3	0	3	3	3	0	6	0	9	0	9	30
07:15 AM	6	0	0	6	0	9	0	9	0	3	0	3	0	9	0	9	27
07:30 AM	0	3	6	9	0	15	0	15	0	6	0	6	6	15	0	21	51
07:45 AM	0	6	15	21	0	3	3	6	3	0	0	3	0	12	3	15	45
Total	6	9	33	48	0	30	3	33	6	12	0	18	6	45	3	54	153
08:00 AM	6	0	9	15	0	27	0	27	6	0	0	6	6	21	0	27	75
08:15 AM	0	0	12	12	3	15	0	18	0	0	0	0	6	15	0	21	51
08:30 AM	0	3	12	15	0	21	0	21	0	6	0	6	9	6	0	15	57
08:45 AM	6	0	12	18	0	18	0	18	0	6	0	6	9	15	0	24	66
Total	12	3	45	60	3	81	0	84	6	12	0	18	30	57	0	87	249
Grand Total	18	12	78	108	3	111	3	117	12	24	0	36	36	102	3	141	402
Apprch %	16.7	11.1	72.2		2.6	94.9	2.6		33.3	66.7	0		25.5	72.3	2.1		
Total %	4.5	3	19.4	26.9	0.7	27.6	0.7	29.1	3	6	0	9	9	25.4	0.7	35.1	

	Irwindale Avenue Southbound				Arrow Highway Westbound				Irwindale Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	12	12	0	3	0	3	**3**	3	0	**6**	0	9	0	9	30
07:15 AM	**6**	0	0	6	0	9	0	9	0	3	0	3	0	9	0	9	27
07:30 AM	0	3	6	9	0	**15**	0	**15**	0	**6**	0	6	**6**	**15**	0	**21**	**51**
07:45 AM	0	**6**	**15**	**21**	0	3	**3**	6	3	0	0	3	0	12	**3**	15	45
Total Volume	6	9	33	48	0	30	3	33	6	12	0	18	6	45	3	54	153
% App. Total	12.5	18.8	68.8		0	90.9	9.1		33.3	66.7	0		11.1	83.3	5.6		
PHF	.250	.375	.550	.571	.000	.500	.250	.550	.500	.500	.000	.750	.250	.750	.250	.643	.750

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City of Irwindale
N/S: Irwindale Avenue
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Weather: Clear

File Name : IRWIRARPM
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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Irwindale Avenue Southbound				Arrow Highway Westbound				Irwindale Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	47	183	96	326	17	110	24	151	32	151	20	203	122	304	25	451	1131
04:15 PM	41	136	73	250	13	110	24	147	26	144	15	185	102	325	22	449	1031
04:30 PM	48	202	97	347	35	122	19	176	20	138	18	176	111	322	40	473	1172
04:45 PM	36	177	70	283	17	90	11	118	29	132	24	185	105	343	29	477	1063
Total	172	698	336	1206	82	432	78	592	107	565	77	749	440	1294	116	1850	4397
05:00 PM	37	195	130	362	16	126	25	167	19	169	27	215	121	360	31	512	1256
05:15 PM	60	191	70	321	18	130	20	168	19	124	23	166	117	412	31	560	1215
05:30 PM	51	159	68	278	29	123	14	166	35	116	10	161	106	378	22	506	1111
05:45 PM	30	161	62	253	15	94	8	117	26	149	18	193	111	347	21	479	1042
Total	178	706	330	1214	78	473	67	618	99	558	78	735	455	1497	105	2057	4624
Grand Total	350	1404	666	2420	160	905	145	1210	206	1123	155	1484	895	2791	221	3907	9021
Apprch %	14.5	58	27.5		13.2	74.8	12		13.9	75.7	10.4		22.9	71.4	5.7		
Total %	3.9	15.6	7.4	26.8	1.8	10	1.6	13.4	2.3	12.4	1.7	16.5	9.9	30.9	2.4	43.3	
Passenger Vehicles	349	1370	583	2302	155	845	139	1139	204	1106	149	1459	833	2707	215	3755	8655
% Passenger Vehicles	99.7	97.6	87.5	95.1	96.9	93.4	95.9	94.1	99	98.5	96.1	98.3	93.1	97	97.3	96.1	95.9
Large 2 Axle Vehicles	0	30	25	55	3	31	4	38	1	13	6	20	23	35	4	62	175
% Large 2 Axle Vehicles	0	2.1	3.8	2.3	1.9	3.4	2.8	3.1	0.5	1.2	3.9	1.3	2.6	1.3	1.8	1.6	1.9
3 Axle Vehicles	1	2	33	36	0	22	2	24	1	0	0	1	27	32	1	60	121
% 3 Axle Vehicles	0.3	0.1	5	1.5	0	2.4	1.4	2	0.5	0	0	0.1	3	1.1	0.5	1.5	1.3
4+ Axle Trucks	0	2	25	27	2	7	0	9	0	4	0	4	12	17	1	30	70
% 4+ Axle Trucks	0	0.1	3.8	1.1	1.2	0.8	0	0.7	0	0.4	0	0.3	1.3	0.6	0.5	0.8	0.8

	Irwindale Avenue Southbound				Arrow Highway Westbound				Irwindale Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	48	**202**	97	347	**35**	122	19	**176**	20	138	18	176	111	322	**40**	473	1172
04:45 PM	36	177	70	283	17	90	11	118	**29**	132	24	185	105	343	29	477	1063
05:00 PM	37	195	**130**	**362**	16	126	**25**	167	19	**169**	**27**	**215**	**121**	360	31	512	**1256**
05:15 PM	**60**	191	70	321	18	**130**	20	168	19	124	23	166	117	**412**	31	**560**	1215
Total Volume	181	765	367	1313	86	468	75	629	87	563	92	742	454	1437	131	2022	4706
% App. Total	13.8	58.3	28		13.7	74.4	11.9		11.7	75.9	12.4		22.5	71.1	6.5		
PHF	.754	.947	.706	.907	.614	.900	.750	.893	.750	.833	.852	.863	.938	.872	.819	.903	.937

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Groups Printed- Passenger Vehicles

	Irwindale Avenue Southbound				Arrow Highway Westbound				Irwindale Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
04:00 PM	47	177	75	299	16	96	22	134	32	147	19	198	116	290	24	430	1061
04:15 PM	40	129	65	234	12	100	22	134	25	143	15	183	89	315	21	425	976
04:30 PM	48	197	80	325	33	116	18	167	20	137	17	174	94	308	39	441	1107
04:45 PM	36	171	59	266	17	83	11	111	29	130	24	183	101	328	29	458	1018
Total	171	674	279	1124	78	395	73	546	106	557	75	738	400	1241	113	1754	4162
05:00 PM	37	193	123	353	15	121	25	161	19	167	26	212	120	354	29	503	1229
05:15 PM	60	188	66	314	18	119	20	157	19	122	22	163	108	402	31	541	1175
05:30 PM	51	157	59	267	29	118	13	160	34	113	9	156	100	373	22	495	1078
05:45 PM	30	158	56	244	15	92	8	115	26	147	17	190	105	337	20	462	1011
Total	178	696	304	1178	77	450	66	593	98	549	74	721	433	1466	102	2001	4493
Grand Total	349	1370	583	2302	155	845	139	1139	204	1106	149	1459	833	2707	215	3755	8655
Apprch %	15.2	59.5	25.3		13.6	74.2	12.2		14	75.8	10.2		22.2	72.1	5.7		
Total %	4	15.8	6.7	26.6	1.8	9.8	1.6	13.2	2.4	12.8	1.7	16.9	9.6	31.3	2.5	43.4	

	Irwindale Avenue Southbound				Arrow Highway Westbound				Irwindale Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	48	**197**	80	325	**33**	116	18	**167**	20	137	17	174	94	308	**39**	**441**	1107
04:45 PM	36	171	59	266	17	83	11	111	**29**	130	24	183	101	328	29	458	1018
05:00 PM	37	193	**123**	**353**	15	**121**	**25**	161	19	**167**	**26**	**212**	**120**	354	29	503	**1229**
05:15 PM	**60**	188	66	314	18	119	20	157	19	122	22	163	108	**402**	31	**541**	1175
Total Volume	181	749	328	1258	83	439	74	596	87	556	89	732	423	1392	128	1943	4529
% App. Total	14.4	59.5	26.1		13.9	73.7	12.4		11.9	76	12.2		21.8	71.6	6.6		
PHF	.754	.951	.667	.891	.629	.907	.740	.892	.750	.832	.856	.863	.881	.866	.821	.898	.921

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City of Irwindale
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File Name : IRWIRARPM
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Groups Printed- Large 2 Axle Vehicles

	Irwindale Avenue Southbound				Arrow Highway Westbound				Irwindale Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.5	1.5	1.5		1.5	1.5	1.5		1.5	1.5	1.5		1.5	1.5	1.5		
04:00 PM	0	8	10	18	0	9	0	9	0	4	2	6	3	14	2	19	52
04:15 PM	0	9	3	12	2	4	3	9	0	2	0	2	8	4	2	14	37
04:30 PM	0	6	9	15	2	8	2	12	0	0	2	2	8	10	0	18	47
04:45 PM	0	9	6	15	0	4	0	4	0	2	0	2	3	9	0	12	33
Total	0	32	28	60	4	25	5	34	0	8	4	12	22	37	4	63	169
05:00 PM	0	2	4	6	2	3	0	5	0	3	2	5	0	4	3	7	23
05:15 PM	0	4	2	6	0	8	0	8	0	3	2	5	4	3	0	7	26
05:30 PM	0	3	3	6	0	8	2	10	2	4	2	8	8	2	0	10	34
05:45 PM	0	4	0	4	0	3	0	3	0	2	2	4	2	6	0	8	19
Total	0	13	9	22	2	22	2	26	2	12	8	22	14	15	3	32	102
Grand Total	0	45	37	82	6	47	7	60	2	20	12	34	36	52	7	95	271
Apprch %	0	54.9	45.1		10	78.3	11.7		5.9	58.8	35.3		37.9	54.7	7.4		
Total %	0	16.6	13.7	30.3	2.2	17.3	2.6	22.1	0.7	7.4	4.4	12.5	13.3	19.2	2.6	35.1	

	Irwindale Avenue Southbound				Arrow Highway Westbound				Irwindale Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	6	9	15	2	8	2	12	0	0	2	2	8	10	0	18	47
04:45 PM	0	9	6	15	0	4	0	4	0	2	0	2	3	9	0	12	33
05:00 PM	0	2	4	6	2	3	0	5	0	3	2	5	0	4	3	7	23
05:15 PM	0	4	2	6	0	8	0	8	0	3	2	5	4	3	0	7	26
Total Volume	0	21	21	42	4	23	2	29	0	8	6	14	15	26	3	44	129
% App. Total	0	50	50		13.8	79.3	6.9		0	57.1	42.9		34.1	59.1	6.8		
PHF	.000	.583	.583	.700	.500	.719	.250	.604	.000	.667	.750	.700	.469	.650	.250	.611	.686

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City of Irwindale
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Groups Printed- 3 Axle Vehicles

	Irwindale Avenue Southbound				Arrow Highway Westbound				Irwindale Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	2.0	2.0	2.0		2.0	2.0	2.0		2.0	2.0	2.0		2.0	2.0	2.0		
04:00 PM	0	0	12	12	0	14	4	18	0	0	0	0	4	6	0	10	40
04:15 PM	2	2	6	10	0	10	0	10	2	0	0	2	12	10	0	22	44
04:30 PM	0	2	12	14	0	2	0	2	0	0	0	0	18	8	0	26	42
04:45 PM	0	0	6	6	0	4	0	4	0	0	0	0	4	10	0	14	24
Total	2	4	36	42	0	30	4	34	2	0	0	2	38	34	0	72	150
05:00 PM	0	0	2	2	0	6	0	6	0	0	0	0	2	6	0	8	16
05:15 PM	0	0	4	4	0	8	0	8	0	0	0	0	8	10	0	18	30
05:30 PM	0	0	14	14	0	0	0	0	0	0	0	0	2	6	0	8	22
05:45 PM	0	0	10	10	0	0	0	0	0	0	0	0	4	8	2	14	24
Total	0	0	30	30	0	14	0	14	0	0	0	0	16	30	2	48	92
Grand Total	2	4	66	72	0	44	4	48	2	0	0	2	54	64	2	120	242
Apprch %	2.8	5.6	91.7		0	91.7	8.3		100	0	0		45	53.3	1.7		
Total %	0.8	1.7	27.3	29.8	0	18.2	1.7	19.8	0.8	0	0	0.8	22.3	26.4	0.8	49.6	

	Irwindale Avenue Southbound				Arrow Highway Westbound				Irwindale Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	2	12	14	0	2	0	2	0	0	0	0	18	8	0	26	42
04:45 PM	0	0	6	6	0	4	0	4	0	0	0	0	4	10	0	14	24
05:00 PM	0	0	2	2	0	6	0	6	0	0	0	0	2	6	0	8	16
05:15 PM	0	0	4	4	0	8	0	8	0	0	0	0	8	10	0	18	30
Total Volume	0	2	24	26	0	20	0	20	0	0	0	0	32	34	0	66	112
% App. Total	0	7.7	92.3		0	100	0		0	0	0		48.5	51.5	0		
PHF	.000	.250	.500	.464	.000	.625	.000	.625	.000	.000	.000	.000	.444	.850	.000	.635	.667

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Groups Printed- 4+ Axle Trucks

	Irwindale Avenue Southbound				Arrow Highway Westbound				Irwindale Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0		
04:00 PM	0	3	24	27	3	3	0	6	0	3	0	3	6	6	0	12	48
04:15 PM	0	0	9	9	0	6	0	6	0	0	0	0	6	6	0	12	27
04:30 PM	0	0	15	15	3	0	0	3	0	3	0	3	9	9	3	21	42
04:45 PM	0	0	12	12	0	6	0	6	0	3	0	3	0	12	0	12	33
Total	0	3	60	63	6	15	0	21	0	9	0	9	21	33	3	57	150
05:00 PM	0	3	9	12	0	0	0	0	0	0	0	0	0	0	0	0	12
05:15 PM	0	0	3	3	0	6	0	6	0	0	0	0	6	9	0	15	24
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	3
05:45 PM	0	0	3	3	0	0	0	0	0	3	0	3	9	6	0	15	21
Total	0	3	15	18	0	6	0	6	0	3	0	3	15	18	0	33	60
Grand Total	0	6	75	81	6	21	0	27	0	12	0	12	36	51	3	90	210
Apprch %	0	7.4	92.6		22.2	77.8	0		0	100	0		40	56.7	3.3		
Total %	0	2.9	35.7	38.6	2.9	10	0	12.9	0	5.7	0	5.7	17.1	24.3	1.4	42.9	

	Irwindale Avenue Southbound				Arrow Highway Westbound				Irwindale Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	**15**	**15**	**3**	0	0	3	0	**3**	0	**3**	**9**	9	**3**	**21**	**42**
04:45 PM	0	0	12	12	0	**6**	0	**6**	0	3	0	3	0	**12**	0	12	33
05:00 PM	0	**3**	9	12	0	0	0	0	0	0	0	0	0	0	0	0	12
05:15 PM	0	0	3	3	0	6	0	6	0	0	0	0	6	9	0	15	24
Total Volume	0	3	39	42	3	12	0	15	0	6	0	6	15	30	3	48	111
% App. Total	0	7.1	92.9		20	80	0		0	100	0		31.2	62.5	6.2		
PHF	.000	.250	.650	.700	.250	.500	.000	.625	.000	.500	.000	.500	.417	.625	.250	.571	.661

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City of Irwindale
N/S: Azusa Canyon Road
E/W: Arrow Highway
Weather: Clear

File Name : IRWACARAM
Site Code : 01414253
Start Date : 7/9/2014
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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	2	3	3	8	17	438	5	460	99	3	34	136	3	149	19	171	775
07:15 AM	3	2	5	10	10	345	4	359	128	8	24	160	7	158	29	194	723
07:30 AM	1	1	2	4	19	412	2	433	109	0	41	150	2	156	18	176	763
07:45 AM	2	2	5	9	20	368	4	392	131	4	45	180	2	212	18	232	813
Total	8	8	15	31	66	1563	15	1644	467	15	144	626	14	675	84	773	3074
08:00 AM	2	0	0	2	19	375	5	399	89	0	35	124	5	190	24	219	744
08:15 AM	5	0	2	7	18	343	7	368	84	1	29	114	3	206	17	226	715
08:30 AM	3	1	7	11	17	296	12	325	52	4	27	83	9	183	22	214	633
08:45 AM	13	9	16	38	19	213	22	254	74	3	26	103	16	145	21	182	577
Total	23	10	25	58	73	1227	46	1346	299	8	117	424	33	724	84	841	2669
Grand Total	31	18	40	89	139	2790	61	2990	766	23	261	1050	47	1399	168	1614	5743
Apprch %	34.8	20.2	44.9		4.6	93.3	2		73	2.2	24.9		2.9	86.7	10.4		
Total %	0.5	0.3	0.7	1.5	2.4	48.6	1.1	52.1	13.3	0.4	4.5	18.3	0.8	24.4	2.9	28.1	
Passenger Vehicles	23	17	39	79	126	2497	55	2678	698	21	203	922	46	1184	146	1376	5055
% Passenger Vehicles	74.2	94.4	97.5	88.8	90.6	89.5	90.2	89.6	91.1	91.3	77.8	87.8	97.9	84.6	86.9	85.3	88
Large 2 Axle Vehicles	7	1	0	8	8	177	4	189	45	2	52	99	1	126	17	144	440
% Large 2 Axle Vehicles	22.6	5.6	0	9	5.8	6.3	6.6	6.3	5.9	8.7	19.9	9.4	2.1	9	10.1	8.9	7.7
3 Axle Vehicles	0	0	1	1	1	41	1	43	19	0	3	22	0	27	1	28	94
% 3 Axle Vehicles	0	0	2.5	1.1	0.7	1.5	1.6	1.4	2.5	0	1.1	2.1	0	1.9	0.6	1.7	1.6
4+ Axle Trucks	1	0	0	1	4	75	1	80	4	0	3	7	0	62	4	66	154
% 4+ Axle Trucks	3.2	0	0	1.1	2.9	2.7	1.6	2.7	0.5	0	1.1	0.7	0	4.4	2.4	4.1	2.7

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	2	3	3	8	17	438	5	460	99	3	34	136	3	149	19	171	775
07:15 AM	3	2	5	10	10	345	4	359	128	8	24	160	7	158	29	194	723
07:30 AM	1	1	2	4	19	412	2	433	109	0	41	150	2	156	18	176	763
07:45 AM	2	2	5	9	20	368	4	392	131	4	45	180	2	212	18	232	813
Total Volume	8	8	15	31	66	1563	15	1644	467	15	144	626	14	675	84	773	3074
% App. Total	25.8	25.8	48.4		4	95.1	0.9		74.6	2.4	23		1.8	87.3	10.9		
PHF	.667	.667	.750	.775	.825	.892	.750	.893	.891	.469	.800	.869	.500	.796	.724	.833	.945

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City of Irwindale
N/S: Azusa Canyon Road
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Weather: Clear

File Name : IRWACARAM
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Groups Printed- Passenger Vehicles

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
07:00 AM	2	3	3	8	15	408	3	426	86	2	31	119	3	118	18	139	692
07:15 AM	2	2	5	9	10	317	3	330	118	7	19	144	7	130	24	161	644
07:30 AM	0	0	1	1	17	378	2	397	101	0	29	130	2	131	13	146	674
07:45 AM	1	2	5	8	18	331	4	353	122	4	37	163	2	188	17	207	731
Total	5	7	14	26	60	1434	12	1506	427	13	116	556	14	567	72	653	2741
08:00 AM	0	0	0	0	18	329	5	352	78	0	23	101	4	158	21	183	636
08:15 AM	3	0	2	5	16	296	6	318	78	1	20	99	3	183	15	201	623
08:30 AM	2	1	7	10	16	259	11	286	46	4	24	74	9	149	20	178	548
08:45 AM	13	9	16	38	16	179	21	216	69	3	20	92	16	127	18	161	507
Total	18	10	25	53	66	1063	43	1172	271	8	87	366	32	617	74	723	2314
Grand Total	23	17	39	79	126	2497	55	2678	698	21	203	922	46	1184	146	1376	5055
Apprch %	29.1	21.5	49.4		4.7	93.2	2.1		75.7	2.3	22		3.3	86	10.6		
Total %	0.5	0.3	0.8	1.6	2.5	49.4	1.1	53	13.8	0.4	4	18.2	0.9	23.4	2.9	27.2	

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	2	3	3	8	15	408	3	426	86	2	31	119	3	118	18	139	692
07:15 AM	2	2	5	9	10	317	3	330	118	7	19	144	7	130	24	161	644
07:30 AM	0	0	1	1	17	378	2	397	101	0	29	130	2	131	13	146	674
07:45 AM	1	2	5	8	18	331	4	353	122	4	37	163	2	188	17	207	731
Total Volume	5	7	14	26	60	1434	12	1506	427	13	116	556	14	567	72	653	2741
% App. Total	19.2	26.9	53.8		4	95.2	0.8		76.8	2.3	20.9		2.1	86.8	11		
PHF	.625	.583	.700	.722	.833	.879	.750	.884	.875	.464	.784	.853	.500	.754	.750	.789	.937

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Groups Printed- Large 2 Axle Vehicles

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.5	1.5	1.5		1.5	1.5	1.5		1.5	1.5	1.5		1.5	1.5	1.5		
07:00 AM	0	0	0	0	2	22	2	26	14	2	3	19	0	32	0	32	77
07:15 AM	2	0	0	2	0	32	2	34	8	2	8	18	0	27	4	31	85
07:30 AM	0	2	0	2	3	33	0	36	8	0	18	26	0	26	6	32	96
07:45 AM	2	0	0	2	3	39	0	42	10	0	9	19	0	26	2	28	91
Total	4	2	0	6	8	126	4	138	40	4	38	82	0	111	12	123	349
08:00 AM	3	0	0	3	2	45	0	47	12	0	16	28	2	26	3	31	109
08:15 AM	3	0	0	3	0	45	2	47	4	0	14	18	0	20	3	23	91
08:30 AM	2	0	0	2	0	26	0	26	6	0	4	10	0	22	3	25	63
08:45 AM	0	0	0	0	3	24	2	29	6	0	6	12	0	12	4	16	57
Total	8	0	0	8	5	140	4	149	28	0	40	68	2	80	13	95	320
Grand Total	12	2	0	14	13	266	8	287	68	4	78	150	2	191	25	218	669
Apprch %	85.7	14.3	0		4.5	92.7	2.8		45.3	2.7	52		0.9	87.6	11.5		
Total %	1.8	0.3	0	2.1	1.9	39.8	1.2	42.9	10.2	0.6	11.7	22.4	0.3	28.6	3.7	32.6	

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	2	22	2	26	14	2	3	19	0	32	0	32	77
07:15 AM	2	0	0	2	0	32	2	34	8	2	8	18	0	27	4	31	85
07:30 AM	0	2	0	2	3	33	0	36	8	0	18	26	0	26	6	32	96
07:45 AM	2	0	0	2	3	39	0	42	10	0	9	19	0	26	2	28	91
Total Volume	4	2	0	6	8	126	4	138	40	4	38	82	0	111	12	123	349
% App. Total	66.7	33.3	0		5.8	91.3	2.9		48.8	4.9	46.3		0	90.2	9.8		
PHF	.500	.250	.000	.750	.667	.808	.500	.821	.714	.500	.528	.788	.000	.867	.500	.961	.909

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Groups Printed- 3 Axle Vehicles

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	2.0	2.0	2.0		2.0	2.0	2.0		2.0	2.0	2.0		2.0	2.0	2.0		
07:00 AM	0	0	0	0	0	12	0	12	8	0	0	8	0	6	0	6	26
07:15 AM	0	0	0	0	0	6	0	6	8	0	0	8	0	4	2	6	20
07:30 AM	0	0	2	2	0	10	0	10	6	0	0	6	0	4	0	4	22
07:45 AM	0	0	0	0	0	10	0	10	4	0	4	8	0	0	0	0	18
Total	0	0	2	2	0	38	0	38	26	0	4	30	0	14	2	16	86
08:00 AM	0	0	0	0	0	4	0	4	4	0	0	4	0	12	0	12	20
08:15 AM	0	0	0	0	2	10	0	12	4	0	0	4	0	8	0	8	24
08:30 AM	0	0	0	0	0	16	2	18	2	0	0	2	0	12	0	12	32
08:45 AM	0	0	0	0	0	14	0	14	2	0	2	4	0	8	0	8	26
Total	0	0	0	0	2	44	2	48	12	0	2	14	0	40	0	40	102
Grand Total	0	0	2	2	2	82	2	86	38	0	6	44	0	54	2	56	188
Apprch %	0	0	100		2.3	95.3	2.3		86.4	0	13.6		0	96.4	3.6		
Total %	0	0	1.1	1.1	1.1	43.6	1.1	45.7	20.2	0	3.2	23.4	0	28.7	1.1	29.8	

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	12	0	12	8	0	0	8	0	6	0	6	26
07:15 AM	0	0	0	0	0	6	0	6	8	0	0	8	0	4	2	6	20
07:30 AM	0	0	2	2	0	10	0	10	6	0	0	6	0	4	0	4	22
07:45 AM	0	0	0	0	0	10	0	10	4	0	4	8	0	0	0	0	18
Total Volume	0	0	2	2	0	38	0	38	26	0	4	30	0	14	2	16	86
% App. Total	0	0	100		0	100	0		86.7	0	13.3		0	87.5	12.5		
PHF	.000	.000	.250	.250	.000	.792	.000	.792	.813	.000	.250	.938	.000	.583	.250	.667	.827

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Groups Printed- 4+ Axle Trucks

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0		
07:00 AM	0	0	0	0	3	27	3	33	0	0	3	3	0	21	3	24	60
07:15 AM	0	0	0	0	0	12	0	12	3	0	0	3	0	24	3	27	42
07:30 AM	3	0	0	3	0	21	0	21	0	0	0	0	0	18	3	21	45
07:45 AM	0	0	0	0	0	18	0	18	0	0	0	0	0	21	0	21	39
Total	3	0	0	3	3	78	3	84	3	0	3	6	0	84	9	93	186
08:00 AM	0	0	0	0	0	42	0	42	3	0	3	6	0	27	3	30	78
08:15 AM	0	0	0	0	3	36	0	39	3	0	0	3	0	18	0	18	60
08:30 AM	0	0	0	0	3	36	0	39	3	0	0	3	0	39	0	39	81
08:45 AM	0	0	0	0	3	33	0	36	0	0	3	3	0	18	0	18	57
Total	0	0	0	0	9	147	0	156	9	0	6	15	0	102	3	105	276
Grand Total	3	0	0	3	12	225	3	240	12	0	9	21	0	186	12	198	462
Apprch %	100	0	0		5	93.8	1.2		57.1	0	42.9		0	93.9	6.1		
Total %	0.6	0	0	0.6	2.6	48.7	0.6	51.9	2.6	0	1.9	4.5	0	40.3	2.6	42.9	

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	**3**	**27**	**3**	**33**	0	0	**3**	**3**	0	21	3	24	**60**
07:15 AM	0	0	0	0	0	12	0	12	**3**	0	0	3	0	**24**	3	**27**	42
07:30 AM	**3**	0	0	**3**	0	21	0	21	0	0	0	0	0	18	3	21	45
07:45 AM	0	0	0	0	0	18	0	18	0	0	0	0	0	21	0	21	39
Total Volume	3	0	0	3	3	78	3	84	3	0	3	6	0	84	9	93	186
% App. Total	100	0	0		3.6	92.9	3.6		50	0	50		0	90.3	9.7		
PHF	.250	.000	.000	.250	.250	.722	.250	.636	.250	.000	.250	.500	.000	.875	.750	.861	.775

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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	8	7	9	24	27	218	3	248	43	1	43	87	5	363	45	413	772
04:15 PM	3	3	4	10	38	196	0	234	34	1	41	76	1	393	43	437	757
04:30 PM	9	2	4	15	23	231	7	261	36	1	35	72	5	391	44	440	788
04:45 PM	2	2	5	9	37	185	1	223	29	0	38	67	3	412	45	460	759
Total	22	14	22	58	125	830	11	966	142	3	157	302	14	1559	177	1750	3076
05:00 PM	7	4	11	22	38	297	6	341	33	1	38	72	0	439	27	466	901
05:15 PM	3	1	8	12	32	219	0	251	38	1	37	76	6	448	40	494	833
05:30 PM	2	2	3	7	32	232	3	267	29	2	40	71	3	439	58	500	845
05:45 PM	0	1	3	4	33	194	1	228	28	6	38	72	6	411	61	478	782
Total	12	8	25	45	135	942	10	1087	128	10	153	291	15	1737	186	1938	3361
Grand Total	34	22	47	103	260	1772	21	2053	270	13	310	593	29	3296	363	3688	6437
Apprch %	33	21.4	45.6		12.7	86.3	1		45.5	2.2	52.3		0.8	89.4	9.8		
Total %	0.5	0.3	0.7	1.6	4	27.5	0.3	31.9	4.2	0.2	4.8	9.2	0.5	51.2	5.6	57.3	
Passenger Vehicles	34	21	45	100	241	1594	19	1854	258	13	292	563	27	3066	339	3432	5949
% Passenger Vehicles	100	95.5	95.7	97.1	92.7	90	90.5	90.3	95.6	100	94.2	94.9	93.1	93	93.4	93.1	92.4
Large 2 Axle Vehicles	0	1	2	3	17	86	2	105	11	0	13	24	2	146	17	165	297
% Large 2 Axle Vehicles	0	4.5	4.3	2.9	6.5	4.9	9.5	5.1	4.1	0	4.2	4	6.9	4.4	4.7	4.5	4.6
3 Axle Vehicles	0	0	0	0	0	56	0	56	1	0	2	3	0	59	6	65	124
% 3 Axle Vehicles	0	0	0	0	0	3.2	0	2.7	0.4	0	0.6	0.5	0	1.8	1.7	1.8	1.9
4+ Axle Trucks	0	0	0	0	2	36	0	38	0	0	3	3	0	25	1	26	67
% 4+ Axle Trucks	0	0	0	0	0.8	2	0	1.9	0	0	1	0.5	0	0.8	0.3	0.7	1

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	7	4	11	22	38	297	6	341	33	1	38	72	0	439	27	466	901
05:15 PM	3	1	8	12	32	219	0	251	38	1	37	76	6	448	40	494	833
05:30 PM	2	2	3	7	32	232	3	267	29	2	40	71	3	439	58	500	845
05:45 PM	0	1	3	4	33	194	1	228	28	6	38	72	6	411	61	478	782
Total Volume	12	8	25	45	135	942	10	1087	128	10	153	291	15	1737	186	1938	3361
% App. Total	26.7	17.8	55.6		12.4	86.7	0.9		44	3.4	52.6		0.8	89.6	9.6		
PHF	.429	.500	.568	.511	.888	.793	.417	.797	.842	.417	.956	.957	.625	.969	.762	.969	.933

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City of Irwindale
N/S: Azusa Canyon Road
E/W: Arrow Highway
Weather: Clear

File Name : IRWACARPM
Site Code : 01414253
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Groups Printed- Passenger Vehicles

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
04:00 PM	8	7	9	24	25	180	2	207	39	1	40	80	4	329	42	375	686
04:15 PM	3	3	3	9	33	169	0	202	31	1	35	67	1	359	40	400	678
04:30 PM	9	2	4	15	19	211	6	236	33	1	31	65	5	346	43	394	710
04:45 PM	2	2	5	9	33	159	1	193	29	0	37	66	3	385	41	429	697
Total	22	14	21	57	110	719	9	838	132	3	143	278	13	1419	166	1598	2771
05:00 PM	7	4	11	22	37	278	6	321	32	1	37	70	0	408	24	432	845
05:15 PM	3	0	7	10	31	203	0	234	38	1	36	75	5	431	37	473	792
05:30 PM	2	2	3	7	31	216	3	250	28	2	39	69	3	417	55	475	801
05:45 PM	0	1	3	4	32	178	1	211	28	6	37	71	6	391	57	454	740
Total	12	7	24	43	131	875	10	1016	126	10	149	285	14	1647	173	1834	3178
Grand Total	34	21	45	100	241	1594	19	1854	258	13	292	563	27	3066	339	3432	5949
Apprch %	34	21	45		13	86	1		45.8	2.3	51.9		0.8	89.3	9.9		
Total %	0.6	0.4	0.8	1.7	4.1	26.8	0.3	31.2	4.3	0.2	4.9	9.5	0.5	51.5	5.7	57.7	

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**7**	**4**	**11**	**22**	**37**	**278**	**6**	**321**	32	1	37	70	0	408	24	432	**845**
05:15 PM	3	0	7	10	31	203	0	234	**38**	1	36	**75**	5	**431**	37	473	792
05:30 PM	2	2	3	7	31	216	3	250	28	2	**39**	69	3	417	55	**475**	801
05:45 PM	0	1	3	4	32	178	1	211	28	**6**	37	71	**6**	391	**57**	454	740
Total Volume	12	7	24	43	131	875	10	1016	126	10	149	285	14	1647	173	1834	3178
% App. Total	27.9	16.3	55.8		12.9	86.1	1		44.2	3.5	52.3		0.8	89.8	9.4		
PHF	.429	.438	.545	.489	.885	.787	.417	.791	.829	.417	.955	.950	.583	.955	.759	.965	.940

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City of Irwindale
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Groups Printed- Large 2 Axle Vehicles

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.5	1.5	1.5		1.5	1.5	1.5		1.5	1.5	1.5		1.5	1.5	1.5		
04:00 PM	0	0	0	0	3	18	2	23	4	0	2	6	2	36	4	42	71
04:15 PM	0	0	2	2	8	18	0	26	4	0	9	13	0	26	4	30	71
04:30 PM	0	0	0	0	3	20	2	25	4	0	4	8	0	42	2	44	77
04:45 PM	0	0	0	0	6	18	0	24	0	0	2	2	0	28	3	31	57
Total	0	0	2	2	20	74	4	98	12	0	17	29	2	132	13	147	276
05:00 PM	0	0	0	0	2	14	0	16	2	0	2	4	0	36	3	39	59
05:15 PM	0	2	2	4	2	12	0	14	0	0	0	0	2	12	3	17	35
05:30 PM	0	0	0	0	2	14	0	16	2	0	2	4	0	24	3	27	47
05:45 PM	0	0	0	0	2	16	0	18	0	0	0	0	0	15	3	18	36
Total	0	2	2	4	8	56	0	64	4	0	4	8	2	87	12	101	177
Grand Total	0	2	4	6	28	130	4	162	16	0	21	37	4	219	25	248	453
Apprch %	0	33.3	66.7		17.3	80.2	2.5		43.2	0	56.8		1.6	88.3	10.1		
Total %	0	0.4	0.9	1.3	6.2	28.7	0.9	35.8	3.5	0	4.6	8.2	0.9	48.3	5.5	54.7	

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	**2**	14	0	16	**2**	0	**2**	4	0	**36**	**3**	**39**	**59**
05:15 PM	0	**2**	**2**	**4**	2	12	0	14	0	0	0	0	**2**	12	3	17	35
05:30 PM	0	0	0	0	2	14	0	16	2	0	2	4	0	24	3	27	47
05:45 PM	0	0	0	0	2	**16**	0	**18**	0	0	0	0	0	15	3	18	36
Total Volume	0	2	2	4	8	56	0	64	4	0	4	8	2	87	12	101	177
% App. Total	0	50	50		12.5	87.5	0		50	0	50		2	86.1	11.9		
PHF	.000	.250	.250	.250	1.00	.875	.000	.889	.500	.000	.500	.500	.250	.604	1.00	.647	.750

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Groups Printed- 3 Axle Vehicles

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	2.0	2.0	2.0		2.0	2.0	2.0		2.0	2.0	2.0		2.0	2.0	2.0		
04:00 PM	0	0	0	0	0	26	0	26	2	0	2	4	0	14	0	14	44
04:15 PM	0	0	0	0	0	12	0	12	0	0	0	0	0	22	0	22	34
04:30 PM	0	0	0	0	0	8	0	8	0	0	0	0	0	24	0	24	32
04:45 PM	0	0	0	0	0	20	0	20	0	0	0	0	0	10	2	12	32
Total	0	0	0	0	0	66	0	66	2	0	2	4	0	70	2	72	142
05:00 PM	0	0	0	0	0	12	0	12	0	0	0	0	0	14	2	16	28
05:15 PM	0	0	0	0	0	10	0	10	0	0	0	0	0	12	2	14	24
05:30 PM	0	0	0	0	0	14	0	14	0	0	0	0	0	8	2	10	24
05:45 PM	0	0	0	0	0	10	0	10	0	0	2	2	0	14	4	18	30
Total	0	0	0	0	0	46	0	46	0	0	2	2	0	48	10	58	106
Grand Total	0	0	0	0	0	112	0	112	2	0	4	6	0	118	12	130	248
Apprch %	0	0	0		0	100	0		33.3	0	66.7		0	90.8	9.2		
Total %	0	0	0	0	0	45.2	0	45.2	0.8	0	1.6	2.4	0	47.6	4.8	52.4	

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	0	12	0	12	0	0	0	0	0	14	2	16	28
05:15 PM	0	0	0	0	0	10	0	10	0	0	0	0	0	12	2	14	24
05:30 PM	0	0	0	0	0	14	0	14	0	0	0	0	0	8	2	10	24
05:45 PM	0	0	0	0	0	10	0	10	0	0	2	2	0	14	4	18	30
Total Volume	0	0	0	0	0	46	0	46	0	0	2	2	0	48	10	58	106
% App. Total	0	0	0		0	100	0		0	0	100		0	82.8	17.2		
PHF	.000	.000	.000	.000	.000	.821	.000	.821	.000	.000	.250	.250	.000	.857	.625	.806	.883

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Groups Printed- 4+ Axle Trucks

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0		
04:00 PM	0	0	0	0	0	39	0	39	0	0	3	3	0	9	0	9	51
04:15 PM	0	0	0	0	0	27	0	27	0	0	0	0	0	18	0	18	45
04:30 PM	0	0	0	0	6	9	0	15	0	0	3	3	0	15	0	15	33
04:45 PM	0	0	0	0	0	12	0	12	0	0	0	0	0	9	3	12	24
Total	0	0	0	0	6	87	0	93	0	0	6	6	0	51	3	54	153
05:00 PM	0	0	0	0	0	12	0	12	0	0	0	0	0	0	0	0	12
05:15 PM	0	0	0	0	0	9	0	9	0	0	3	3	0	9	0	9	21
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6	6
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	9	9
Total	0	0	0	0	0	21	0	21	0	0	3	3	0	24	0	24	48
Grand Total	0	0	0	0	6	108	0	114	0	0	9	9	0	75	3	78	201
Apprch %	0	0	0		5.3	94.7	0		0	0	100		0	96.2	3.8		
Total %	0	0	0	0	3	53.7	0	56.7	0	0	4.5	4.5	0	37.3	1.5	38.8	

	Azusa Canyon Road Southbound				Arrow Highway Westbound				Azusa Canyon Road Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	0	**12**	0	**12**	0	0	0	0	0	0	0	0	12
05:15 PM	0	0	0	0	0	9	0	9	0	0	**3**	**3**	0	**9**	0	**9**	**21**
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6	6
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	9	9
Total Volume	0	0	0	0	0	21	0	21	0	0	3	3	0	24	0	24	48
% App. Total	0	0	0		0	100	0		0	0	100		0	100	0		
PHF	.000	.000	.000	.000	.000	.438	.000	.438	.000	.000	.250	.250	.000	.667	.000	.667	.571

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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Irwindale Avenue Southbound				Arrow Highway Westbound				Irwindale Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	47	183	96	326	17	110	24	151	32	151	20	203	122	304	25	451	1131
04:15 PM	41	136	73	250	13	110	24	147	26	144	15	185	102	325	22	449	1031
04:30 PM	48	202	97	347	35	122	19	176	20	138	18	176	111	322	40	473	1172
04:45 PM	36	177	70	283	17	90	11	118	29	132	24	185	105	343	29	477	1063
Total	172	698	336	1206	82	432	78	592	107	565	77	749	440	1294	116	1850	4397
05:00 PM	37	195	130	362	16	126	25	167	19	169	27	215	121	360	31	512	1256
05:15 PM	60	191	70	321	18	130	20	168	19	124	23	166	117	412	31	560	1215
05:30 PM	51	159	68	278	29	123	14	166	35	116	10	161	106	378	22	506	1111
05:45 PM	30	161	62	253	15	94	8	117	26	149	18	193	111	347	21	479	1042
Total	178	706	330	1214	78	473	67	618	99	558	78	735	455	1497	105	2057	4624
Grand Total	350	1404	666	2420	160	905	145	1210	206	1123	155	1484	895	2791	221	3907	9021
Apprch %	14.5	58	27.5		13.2	74.8	12		13.9	75.7	10.4		22.9	71.4	5.7		
Total %	3.9	15.6	7.4	26.8	1.8	10	1.6	13.4	2.3	12.4	1.7	16.5	9.9	30.9	2.4	43.3	
Passenger Vehicles	349	1370	583	2302	155	845	139	1139	204	1106	149	1459	833	2707	215	3755	8655
% Passenger Vehicles	99.7	97.6	87.5	95.1	96.9	93.4	95.9	94.1	99	98.5	96.1	98.3	93.1	97	97.3	96.1	95.9
Large 2 Axle Vehicles	0	30	25	55	3	31	4	38	1	13	6	20	23	35	4	62	175
% Large 2 Axle Vehicles	0	2.1	3.8	2.3	1.9	3.4	2.8	3.1	0.5	1.2	3.9	1.3	2.6	1.3	1.8	1.6	1.9
3 Axle Vehicles	1	2	33	36	0	22	2	24	1	0	0	1	27	32	1	60	121
% 3 Axle Vehicles	0.3	0.1	5	1.5	0	2.4	1.4	2	0.5	0	0	0.1	3	1.1	0.5	1.5	1.3
4+ Axle Trucks	0	2	25	27	2	7	0	9	0	4	0	4	12	17	1	30	70
% 4+ Axle Trucks	0	0.1	3.8	1.1	1.2	0.8	0	0.7	0	0.4	0	0.3	1.3	0.6	0.5	0.8	0.8

	Irwindale Avenue Southbound				Arrow Highway Westbound				Irwindale Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	48	**202**	97	347	**35**	122	19	**176**	20	138	18	176	111	322	**40**	473	1172
04:45 PM	36	177	70	283	17	90	11	118	**29**	132	24	185	105	343	29	477	1063
05:00 PM	37	195	**130**	**362**	16	126	**25**	167	19	**169**	**27**	**215**	**121**	360	31	512	**1256**
05:15 PM	**60**	191	70	321	18	**130**	20	168	19	124	23	166	117	**412**	31	**560**	1215
Total Volume	181	765	367	1313	86	468	75	629	87	563	92	742	454	1437	131	2022	4706
% App. Total	13.8	58.3	28		13.7	74.4	11.9		11.7	75.9	12.4		22.5	71.1	6.5		
PHF	.754	.947	.706	.907	.614	.900	.750	.893	.750	.833	.852	.863	.938	.872	.819	.903	.937

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Groups Printed- Passenger Vehicles

	Irwindale Avenue Southbound				Arrow Highway Westbound				Irwindale Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
04:00 PM	47	177	75	299	16	96	22	134	32	147	19	198	116	290	24	430	1061
04:15 PM	40	129	65	234	12	100	22	134	25	143	15	183	89	315	21	425	976
04:30 PM	48	197	80	325	33	116	18	167	20	137	17	174	94	308	39	441	1107
04:45 PM	36	171	59	266	17	83	11	111	29	130	24	183	101	328	29	458	1018
Total	171	674	279	1124	78	395	73	546	106	557	75	738	400	1241	113	1754	4162
05:00 PM	37	193	123	353	15	121	25	161	19	167	26	212	120	354	29	503	1229
05:15 PM	60	188	66	314	18	119	20	157	19	122	22	163	108	402	31	541	1175
05:30 PM	51	157	59	267	29	118	13	160	34	113	9	156	100	373	22	495	1078
05:45 PM	30	158	56	244	15	92	8	115	26	147	17	190	105	337	20	462	1011
Total	178	696	304	1178	77	450	66	593	98	549	74	721	433	1466	102	2001	4493
Grand Total	349	1370	583	2302	155	845	139	1139	204	1106	149	1459	833	2707	215	3755	8655
Apprch %	15.2	59.5	25.3		13.6	74.2	12.2		14	75.8	10.2		22.2	72.1	5.7		
Total %	4	15.8	6.7	26.6	1.8	9.8	1.6	13.2	2.4	12.8	1.7	16.9	9.6	31.3	2.5	43.4	

	Irwindale Avenue Southbound				Arrow Highway Westbound				Irwindale Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	48	**197**	80	325	**33**	116	18	**167**	20	137	17	**174**	94	308	**39**	441	1107
04:45 PM	36	171	59	266	17	83	11	111	**29**	130	24	**183**	101	328	29	458	1018
05:00 PM	37	193	**123**	**353**	15	**121**	**25**	161	19	**167**	**26**	**212**	**120**	354	29	503	**1229**
05:15 PM	**60**	188	66	314	18	119	20	157	19	122	22	163	108	**402**	31	**541**	1175
Total Volume	181	749	328	1258	83	439	74	596	87	556	89	732	423	1392	128	1943	4529
% App. Total	14.4	59.5	26.1		13.9	73.7	12.4		11.9	76	12.2		21.8	71.6	6.6		
PHF	.754	.951	.667	.891	.629	.907	.740	.892	.750	.832	.856	.863	.881	.866	.821	.898	.921

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City of Irwindale
N/S: Irwindale Avenue
E/W: Arrow Highway
Weather: Clear

File Name : IRWIRARPM
Site Code : 01414253
Start Date : 7/9/2014
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Groups Printed- Large 2 Axle Vehicles

	Irwindale Avenue Southbound				Arrow Highway Westbound				Irwindale Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.5	1.5	1.5		1.5	1.5	1.5		1.5	1.5	1.5		1.5	1.5	1.5		
04:00 PM	0	8	10	18	0	9	0	9	0	4	2	6	3	14	2	19	52
04:15 PM	0	9	3	12	2	4	3	9	0	2	0	2	8	4	2	14	37
04:30 PM	0	6	9	15	2	8	2	12	0	0	2	2	8	10	0	18	47
04:45 PM	0	9	6	15	0	4	0	4	0	2	0	2	3	9	0	12	33
Total	0	32	28	60	4	25	5	34	0	8	4	12	22	37	4	63	169
05:00 PM	0	2	4	6	2	3	0	5	0	3	2	5	0	4	3	7	23
05:15 PM	0	4	2	6	0	8	0	8	0	3	2	5	4	3	0	7	26
05:30 PM	0	3	3	6	0	8	2	10	2	4	2	8	8	2	0	10	34
05:45 PM	0	4	0	4	0	3	0	3	0	2	2	4	2	6	0	8	19
Total	0	13	9	22	2	22	2	26	2	12	8	22	14	15	3	32	102
Grand Total	0	45	37	82	6	47	7	60	2	20	12	34	36	52	7	95	271
Apprch %	0	54.9	45.1		10	78.3	11.7		5.9	58.8	35.3		37.9	54.7	7.4		
Total %	0	16.6	13.7	30.3	2.2	17.3	2.6	22.1	0.7	7.4	4.4	12.5	13.3	19.2	2.6	35.1	

	Irwindale Avenue Southbound				Arrow Highway Westbound				Irwindale Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	6	**9**	**15**	**2**	**8**	**2**	**12**	0	0	**2**	2	**8**	**10**	0	**18**	**47**
04:45 PM	0	**9**	6	15	0	4	0	**4**	0	2	0	2	3	9	0	12	33
05:00 PM	0	2	4	6	2	3	0	5	0	**3**	2	**5**	0	4	**3**	7	23
05:15 PM	0	4	2	6	0	8	0	8	0	3	2	5	4	3	0	7	26
Total Volume	0	21	21	42	4	23	2	29	0	8	6	**14**	15	26	3	44	129
% App. Total	0	50	50		13.8	79.3	6.9		0	57.1	42.9		34.1	59.1	6.8		
PHF	.000	.583	.583	.700	.500	.719	.250	.604	.000	.667	.750	.700	.469	.650	.250	.611	.686

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File Name : IRWIRARPM
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Groups Printed- 3 Axle Vehicles

	Irwindale Avenue Southbound				Arrow Highway Westbound				Irwindale Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	2.0	2.0	2.0		2.0	2.0	2.0		2.0	2.0	2.0		2.0	2.0	2.0		
04:00 PM	0	0	12	12	0	14	4	18	0	0	0	0	4	6	0	10	40
04:15 PM	2	2	6	10	0	10	0	10	2	0	0	2	12	10	0	22	44
04:30 PM	0	2	12	14	0	2	0	2	0	0	0	0	18	8	0	26	42
04:45 PM	0	0	6	6	0	4	0	4	0	0	0	0	4	10	0	14	24
Total	2	4	36	42	0	30	4	34	2	0	0	2	38	34	0	72	150
05:00 PM	0	0	2	2	0	6	0	6	0	0	0	0	2	6	0	8	16
05:15 PM	0	0	4	4	0	8	0	8	0	0	0	0	8	10	0	18	30
05:30 PM	0	0	14	14	0	0	0	0	0	0	0	0	2	6	0	8	22
05:45 PM	0	0	10	10	0	0	0	0	0	0	0	0	4	8	2	14	24
Total	0	0	30	30	0	14	0	14	0	0	0	0	16	30	2	48	92
Grand Total	2	4	66	72	0	44	4	48	2	0	0	2	54	64	2	120	242
Apprch %	2.8	5.6	91.7		0	91.7	8.3		100	0	0		45	53.3	1.7		
Total %	0.8	1.7	27.3	29.8	0	18.2	1.7	19.8	0.8	0	0	0.8	22.3	26.4	0.8	49.6	

	Irwindale Avenue Southbound				Arrow Highway Westbound				Irwindale Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	**2**	**12**	**14**	0	2	0	2	0	0	0	0	**18**	8	0	**26**	**42**
04:45 PM	0	0	6	6	0	4	0	**4**	0	0	0	0	4	**10**	0	14	24
05:00 PM	0	0	2	2	0	6	0	6	0	0	0	0	2	6	0	8	16
05:15 PM	0	0	4	**4**	0	**8**	0	**8**	0	0	0	0	8	10	0	18	30
Total Volume	0	2	24	26	0	20	0	20	0	0	0	0	32	34	0	66	112
% App. Total	0	7.7	92.3		0	100	0		0	0	0		48.5	51.5	0		
PHF	.000	.250	.500	.464	.000	.625	.000	.625	.000	.000	.000	.000	.444	.850	.000	.635	.667

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Groups Printed- 4+ Axle Trucks

	Irwindale Avenue Southbound				Arrow Highway Westbound				Irwindale Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0		
04:00 PM	0	3	24	27	3	3	0	6	0	3	0	3	6	6	0	12	48
04:15 PM	0	0	9	9	0	6	0	6	0	0	0	0	6	6	0	12	27
04:30 PM	0	0	15	15	3	0	0	3	0	3	0	3	9	9	3	21	42
04:45 PM	0	0	12	12	0	6	0	6	0	3	0	3	0	12	0	12	33
Total	0	3	60	63	6	15	0	21	0	9	0	9	21	33	3	57	150
05:00 PM	0	3	9	12	0	0	0	0	0	0	0	0	0	0	0	0	12
05:15 PM	0	0	3	3	0	6	0	6	0	0	0	0	6	9	0	15	24
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	3
05:45 PM	0	0	3	3	0	0	0	0	0	3	0	3	9	6	0	15	21
Total	0	3	15	18	0	6	0	6	0	3	0	3	15	18	0	33	60
Grand Total	0	6	75	81	6	21	0	27	0	12	0	12	36	51	3	90	210
Apprch %	0	7.4	92.6		22.2	77.8	0		0	100	0		40	56.7	3.3		
Total %	0	2.9	35.7	38.6	2.9	10	0	12.9	0	5.7	0	5.7	17.1	24.3	1.4	42.9	

	Irwindale Avenue Southbound				Arrow Highway Westbound				Irwindale Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	**15**	**15**	**3**	0	0	3	0	**3**	0	**3**	**9**	9	**3**	**21**	**42**
04:45 PM	0	0	12	12	0	**6**	0	**6**	0	3	0	3	0	**12**	0	12	33
05:00 PM	0	**3**	9	12	0	0	0	0	0	0	0	0	0	0	0	0	12
05:15 PM	0	0	3	3	0	6	0	6	0	0	0	0	6	9	0	15	24
Total Volume	0	3	39	42	3	12	0	15	0	6	0	6	15	30	3	48	111
% App. Total	0	7.1	92.9		20	80	0		0	100	0		31.2	62.5	6.2		
PHF	.000	.250	.650	.700	.250	.500	.000	.625	.000	.500	.000	.500	.417	.625	.250	.571	.661

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City of Irwindale
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Site Code : 01414253
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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Vincent Avenue Southbound				Arrow Highway Westbound				Vincent Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	32	19	52	26	317	24	367	36	47	11	94	10	84	7	101	614
07:15 AM	7	58	17	82	25	234	17	276	47	60	8	115	15	71	17	103	576
07:30 AM	3	40	23	66	22	313	20	355	32	71	11	114	13	98	19	130	665
07:45 AM	8	42	14	64	31	280	15	326	48	77	18	143	16	85	19	120	653
Total	19	172	73	264	104	1144	76	1324	163	255	48	466	54	338	62	454	2508
08:00 AM	3	28	13	44	26	269	23	318	25	53	10	88	9	90	19	118	568
08:15 AM	9	67	20	96	21	223	17	261	41	50	17	108	9	77	22	108	573
08:30 AM	0	26	17	43	28	214	10	252	37	49	36	122	5	86	23	114	531
08:45 AM	5	34	20	59	28	172	15	215	47	39	17	103	12	78	20	110	487
Total	17	155	70	242	103	878	65	1046	150	191	80	421	35	331	84	450	2159
Grand Total	36	327	143	506	207	2022	141	2370	313	446	128	887	89	669	146	904	4667
Apprch %	7.1	64.6	28.3		8.7	85.3	5.9		35.3	50.3	14.4		9.8	74	16.2		
Total %	0.8	7	3.1	10.8	4.4	43.3	3	50.8	6.7	9.6	2.7	19	1.9	14.3	3.1	19.4	
Passenger Vehicles	25	258	113	396	202	1954	130	2286	266	411	106	783	78	606	101	785	4250
% Passenger Vehicles	69.4	78.9	79	78.3	97.6	96.6	92.2	96.5	85	92.2	82.8	88.3	87.6	90.6	69.2	86.8	91.1
Large 2 Axle Vehicles	6	20	17	43	3	45	7	55	8	9	2	19	9	50	6	65	182
% Large 2 Axle Vehicles	16.7	6.1	11.9	8.5	1.4	2.2	5	2.3	2.6	2	1.6	2.1	10.1	7.5	4.1	7.2	3.9
3 Axle Vehicles	4	31	8	43	2	10	3	15	13	8	19	40	1	6	5	12	110
% 3 Axle Vehicles	11.1	9.5	5.6	8.5	1	0.5	2.1	0.6	4.2	1.8	14.8	4.5	1.1	0.9	3.4	1.3	2.4
4+ Axle Trucks	1	18	5	24	0	13	1	14	26	18	1	45	1	7	34	42	125
% 4+ Axle Trucks	2.8	5.5	3.5	4.7	0	0.6	0.7	0.6	8.3	4	0.8	5.1	1.1	1	23.3	4.6	2.7

	Vincent Avenue Southbound				Arrow Highway Westbound				Vincent Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	1	32	19	52	26	317	24	367	36	47	11	94	10	84	7	101	614
07:15 AM	7	58	17	82	25	234	17	276	47	60	8	115	15	71	17	103	576
07:30 AM	3	40	23	66	22	313	20	355	32	71	11	114	13	98	19	130	665
07:45 AM	8	42	14	64	31	280	15	326	48	77	18	143	16	85	19	120	653
Total Volume	19	172	73	264	104	1144	76	1324	163	255	48	466	54	338	62	454	2508
% App. Total	7.2	65.2	27.7		7.9	86.4	5.7		35	54.7	10.3		11.9	74.4	13.7		
PHF	.594	.741	.793	.805	.839	.902	.792	.902	.849	.828	.667	.815	.844	.862	.816	.873	.943

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Groups Printed- Passenger Vehicles

	Vincent Avenue Southbound				Arrow Highway Westbound				Vincent Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
07:00 AM	1	28	13	42	26	307	23	356	34	45	11	90	9	74	6	89	577
07:15 AM	4	54	11	69	25	227	16	268	44	59	7	110	13	59	13	85	532
07:30 AM	1	33	17	51	21	306	19	346	26	68	11	105	12	87	11	110	612
07:45 AM	7	34	11	52	31	267	15	313	45	69	17	131	13	78	13	104	600
Total	13	149	52	214	103	1107	73	1283	149	241	46	436	47	298	43	388	2321
08:00 AM	3	24	10	37	26	261	19	306	21	51	9	81	8	83	13	104	528
08:15 AM	5	40	18	63	20	217	15	252	33	44	16	93	9	70	15	94	502
08:30 AM	0	19	13	32	26	205	9	240	26	42	20	88	5	81	15	101	461
08:45 AM	4	26	20	50	27	164	14	205	37	33	15	85	9	74	15	98	438
Total	12	109	61	182	99	847	57	1003	117	170	60	347	31	308	58	397	1929
Grand Total	25	258	113	396	202	1954	130	2286	266	411	106	783	78	606	101	785	4250
Apprch %	6.3	65.2	28.5		8.8	85.5	5.7		34	52.5	13.5		9.9	77.2	12.9		
Total %	0.6	6.1	2.7	9.3	4.8	46	3.1	53.8	6.3	9.7	2.5	18.4	1.8	14.3	2.4	18.5	

	Vincent Avenue Southbound				Arrow Highway Westbound				Vincent Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	1	28	13	42	26	**307**	**23**	**356**	34	**45**	**11**	90	9	74	6	89	577
07:15 AM	**4**	**54**	**11**	**69**	25	227	16	268	44	59	7	110	**13**	59	**13**	85	532
07:30 AM	1	33	**17**	51	21	306	19	346	26	68	**11**	105	12	**87**	11	**110**	**612**
07:45 AM	**7**	34	**11**	52	**31**	267	15	313	**45**	**69**	**17**	**131**	13	78	13	104	600
Total Volume	13	149	52	214	103	1107	73	1283	149	241	46	436	47	298	43	388	2321
% App. Total	6.1	69.6	24.3		8	86.3	5.7		34.2	55.3	10.6		12.1	76.8	11.1		
PHF	.464	.690	.765	.775	.831	.901	.793	.901	.828	.873	.676	.832	.904	.856	.827	.882	.948

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Groups Printed- Large 2 Axle Vehicles

	Vincent Avenue Southbound				Arrow Highway Westbound				Vincent Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.5	1.5	1.5		1.5	1.5	1.5		1.5	1.5	1.5		1.5	1.5	1.5		
07:00 AM	0	2	3	5	0	6	2	8	2	0	0	2	0	12	0	12	27
07:15 AM	2	4	8	14	0	9	0	9	2	0	0	2	3	12	2	17	42
07:30 AM	3	3	4	10	0	8	2	10	3	2	0	5	2	15	3	20	45
07:45 AM	2	8	4	14	0	15	0	15	0	3	2	5	4	9	2	15	49
Total	7	17	19	43	0	38	4	42	7	5	2	14	9	48	7	64	163
08:00 AM	0	2	2	4	0	6	4	10	0	2	2	4	2	8	0	10	28
08:15 AM	3	6	3	12	0	8	2	10	3	3	0	6	0	9	3	12	40
08:30 AM	0	4	2	6	3	8	0	11	2	2	0	4	0	4	0	4	25
08:45 AM	0	2	0	2	2	9	2	13	2	3	0	5	3	6	0	9	29
Total	3	14	7	24	5	31	8	44	7	10	2	19	5	27	3	35	122
Grand Total	10	31	26	67	5	69	12	86	14	15	4	33	14	75	10	99	285
Apprch %	14.9	46.3	38.8		5.8	80.2	14		42.4	45.5	12.1		14.1	75.8	10.1		
Total %	3.5	10.9	9.1	23.5	1.8	24.2	4.2	30.2	4.9	5.3	1.4	11.6	4.9	26.3	3.5	34.7	

	Vincent Avenue Southbound				Arrow Highway Westbound				Vincent Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	2	3	5	0	6	2	8	2	0	0	2	0	12	0	12	27
07:15 AM	2	4	8	14	0	9	0	9	2	0	0	2	3	12	2	17	42
07:30 AM	3	3	4	10	0	8	2	10	3	2	0	5	2	15	3	20	45
07:45 AM	2	8	4	14	0	15	0	15	0	3	2	5	4	9	2	15	49
Total Volume	7	17	19	43	0	38	4	42	7	5	2	14	9	48	7	64	163
% App. Total	16.3	39.5	44.2		0	90.5	9.5		50	35.7	14.3		14.1	75	10.9		
PHF	.583	.531	.594	.768	.000	.633	.500	.700	.583	.417	.250	.700	.563	.800	.583	.800	.832

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Groups Printed- 3 Axle Vehicles

	Vincent Avenue Southbound				Arrow Highway Westbound				Vincent Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	2.0	2.0	2.0		2.0	2.0	2.0		2.0	2.0	2.0		2.0	2.0	2.0		
07:00 AM	0	2	6	8	0	0	0	0	2	0	0	2	0	4	0	4	14
07:15 AM	2	0	0	2	0	0	0	0	2	0	2	4	0	2	0	2	8
07:30 AM	0	2	4	6	2	4	0	6	0	0	0	0	0	0	0	0	12
07:45 AM	0	0	0	0	0	2	0	2	0	2	0	2	0	2	0	2	6
Total	2	4	10	16	2	6	0	8	4	2	2	8	0	8	0	8	40
08:00 AM	0	2	0	2	0	4	2	6	0	2	0	2	0	2	2	4	14
08:15 AM	4	42	0	46	2	2	2	6	0	0	2	2	0	0	0	0	54
08:30 AM	0	6	6	12	0	4	2	6	12	10	30	52	0	2	6	8	78
08:45 AM	2	8	0	10	0	4	0	4	10	2	4	16	2	0	2	4	34
Total	6	58	6	70	2	14	6	22	22	14	36	72	2	4	10	16	180
Grand Total	8	62	16	86	4	20	6	30	26	16	38	80	2	12	10	24	220
Apprch %	9.3	72.1	18.6		13.3	66.7	20		32.5	20	47.5		8.3	50	41.7		
Total %	3.6	28.2	7.3	39.1	1.8	9.1	2.7	13.6	11.8	7.3	17.3	36.4	0.9	5.5	4.5	10.9	

	Vincent Avenue Southbound				Arrow Highway Westbound				Vincent Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	2	6	8	0	0	0	0	2	0	0	2	0	4	0	4	14
07:15 AM	2	0	0	2	0	0	0	0	2	0	2	4	0	2	0	2	8
07:30 AM	0	2	4	6	2	4	0	6	0	0	0	0	0	0	0	0	12
07:45 AM	0	0	0	0	0	2	0	2	0	2	0	2	0	2	0	2	6
Total Volume	2	4	10	16	2	6	0	8	4	2	2	8	0	8	0	8	40
% App. Total	12.5	25	62.5		25	75	0		50	25	25		0	100	0		
PHF	.250	.500	.417	.500	.250	.375	.000	.333	.500	.250	.250	.500	.000	.500	.000	.500	.714

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City of Irwindale
N/S: Vincent Avenue
E/W: Arrow Highway
Weather: Clear

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Groups Printed- 4+ Axle Trucks

	Vincent Avenue Southbound				Arrow Highway Westbound				Vincent Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0		
07:00 AM	0	6	3	9	0	18	0	18	0	6	0	6	3	0	3	6	39
07:15 AM	3	3	3	9	0	3	3	6	3	3	0	6	0	9	9	18	39
07:30 AM	0	12	3	15	0	0	0	0	12	6	0	18	0	3	18	21	54
07:45 AM	0	9	0	9	0	6	0	6	9	15	0	24	0	0	15	15	54
Total	3	30	9	42	0	27	3	30	24	30	0	54	3	12	45	60	186
08:00 AM	0	6	6	12	0	6	0	6	12	0	0	12	0	3	15	18	48
08:15 AM	0	6	0	6	0	0	0	0	18	12	0	30	0	3	15	18	54
08:30 AM	0	3	0	3	0	6	0	6	12	3	3	18	0	3	15	18	45
08:45 AM	0	9	0	9	0	0	0	0	12	9	0	21	0	0	12	12	42
Total	0	24	6	30	0	12	0	12	54	24	3	81	0	9	57	66	189
Grand Total	3	54	15	72	0	39	3	42	78	54	3	135	3	21	102	126	375
Apprch %	4.2	75	20.8		0	92.9	7.1		57.8	40	2.2		2.4	16.7	81		
Total %	0.8	14.4	4	19.2	0	10.4	0.8	11.2	20.8	14.4	0.8	36	0.8	5.6	27.2	33.6	

	Vincent Avenue Southbound				Arrow Highway Westbound				Vincent Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	6	**3**	9	0	**18**	0	**18**	0	6	0	6	**3**	0	3	6	39
07:15 AM	**3**	3	3	9	0	3	**3**	6	3	3	0	6	0	**9**	9	18	39
07:30 AM	0	**12**	3	**15**	0	0	0	0	**12**	6	0	18	0	3	**18**	**21**	**54**
07:45 AM	0	9	0	9	0	6	0	6	9	**15**	0	**24**	0	0	15	15	54
Total Volume	3	30	9	42	0	27	3	30	24	30	0	54	3	12	45	60	186
% App. Total	7.1	71.4	21.4		0	90	10		44.4	55.6	0		5	20	75		
PHF	.250	.625	.750	.700	.000	.375	.250	.417	.500	.500	.000	.563	.250	.333	.625	.714	.861

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City of Irwindale
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E/W: Arrow Highway
Weather: Clear

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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Vincent Avenue Southbound				Arrow Highway Westbound				Vincent Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	12	75	23	110	20	100	13	133	31	79	38	148	31	278	25	334	725
04:15 PM	9	81	25	115	31	102	12	145	26	64	34	124	52	295	46	393	777
04:30 PM	9	92	27	128	18	124	8	150	18	77	32	127	46	332	34	412	817
04:45 PM	4	58	21	83	29	89	13	131	8	66	35	109	53	312	45	410	733
Total	34	306	96	436	98	415	46	559	83	286	139	508	182	1217	150	1549	3052
05:00 PM	10	75	29	114	27	119	7	153	20	69	26	115	46	336	48	430	812
05:15 PM	11	47	29	87	25	126	5	156	10	74	39	123	49	332	63	444	810
05:30 PM	7	54	9	70	22	134	7	163	15	74	35	124	42	357	62	461	818
05:45 PM	5	41	18	64	15	96	7	118	10	57	37	104	43	340	60	443	729
Total	33	217	85	335	89	475	26	590	55	274	137	466	180	1365	233	1778	3169
Grand Total	67	523	181	771	187	890	72	1149	138	560	276	974	362	2582	383	3327	6221
Apprch %	8.7	67.8	23.5		16.3	77.5	6.3		14.2	57.5	28.3		10.9	77.6	11.5		
Total %	1.1	8.4	2.9	12.4	3	14.3	1.2	18.5	2.2	9	4.4	15.7	5.8	41.5	6.2	53.5	
Passenger Vehicles	62	500	163	725	184	859	68	1111	118	511	270	899	321	2552	380	3253	5988
% Passenger Vehicles	92.5	95.6	90.1	94	98.4	96.5	94.4	96.7	85.5	91.2	97.8	92.3	88.7	98.8	99.2	97.8	96.3
Large 2 Axle Vehicles	4	12	8	24	3	23	3	29	3	9	1	13	8	18	0	26	92
% Large 2 Axle Vehicles	6	2.3	4.4	3.1	1.6	2.6	4.2	2.5	2.2	1.6	0.4	1.3	2.2	0.7	0	0.8	1.5
3 Axle Vehicles	1	9	7	17	0	3	1	4	14	39	5	58	29	5	3	37	116
% 3 Axle Vehicles	1.5	1.7	3.9	2.2	0	0.3	1.4	0.3	10.1	7	1.8	6	8	0.2	0.8	1.1	1.9
4+ Axle Trucks	0	2	3	5	0	5	0	5	3	1	0	4	4	7	0	11	25
% 4+ Axle Trucks	0	0.4	1.7	0.6	0	0.6	0	0.4	2.2	0.2	0	0.4	1.1	0.3	0	0.3	0.4

	Vincent Avenue Southbound				Arrow Highway Westbound				Vincent Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	4	58	21	83	**29**	89	**13**	131	8	66	35	109	**53**	312	45	410	733
05:00 PM	10	**75**	**29**	**114**	27	119	7	153	**20**	69	26	115	46	336	48	430	812
05:15 PM	**11**	47	29	87	25	126	5	156	10	**74**	**39**	123	49	332	**63**	444	810
05:30 PM	7	54	9	70	22	**134**	7	**163**	15	74	35	**124**	42	**357**	62	**461**	**818**
Total Volume	32	234	88	354	103	468	32	603	53	283	135	471	190	1337	218	1745	3173
% App. Total	9	66.1	24.9		17.1	77.6	5.3		11.3	60.1	28.7		10.9	76.6	12.5		
PHF	.727	.780	.759	.776	.888	.873	.615	.925	.663	.956	.865	.950	.896	.936	.865	.946	.970

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Groups Printed- Passenger Vehicles

	Vincent Avenue Southbound				Arrow Highway Westbound				Vincent Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
04:00 PM	11	66	23	100	19	90	12	121	22	71	35	128	26	272	25	323	672
04:15 PM	8	76	20	104	30	98	12	140	19	58	32	109	44	290	46	380	733
04:30 PM	9	92	24	125	17	119	5	141	18	68	32	118	42	326	34	402	786
04:45 PM	4	55	20	79	29	86	13	128	8	59	35	102	44	308	45	397	706
Total	32	289	87	408	95	393	42	530	67	256	134	457	156	1196	150	1502	2897
05:00 PM	9	71	25	105	27	118	7	152	19	67	26	112	41	335	47	423	792
05:15 PM	9	47	25	81	25	123	5	153	7	69	39	115	46	329	61	436	785
05:30 PM	7	52	8	67	22	131	7	160	15	67	34	116	38	354	62	454	797
05:45 PM	5	41	18	64	15	94	7	116	10	52	37	99	40	338	60	438	717
Total	30	211	76	317	89	466	26	581	51	255	136	442	165	1356	230	1751	3091
Grand Total	62	500	163	725	184	859	68	1111	118	511	270	899	321	2552	380	3253	5988
Apprch %	8.6	69	22.5		16.6	77.3	6.1		13.1	56.8	30		9.9	78.5	11.7		
Total %	1	8.4	2.7	12.1	3.1	14.3	1.1	18.6	2	8.5	4.5	15	5.4	42.6	6.3	54.3	

	Vincent Avenue Southbound				Arrow Highway Westbound				Vincent Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	4	55	20	79	**29**	86	**13**	128	8	59	35	102	44	308	45	397	706
05:00 PM	**9**	**71**	**25**	**105**	27	118	7	152	**19**	67	26	112	41	335	47	423	792
05:15 PM	9	47	25	81	25	123	5	153	7	**69**	**39**	**115**	**46**	329	61	436	785
05:30 PM	7	52	8	67	22	**131**	7	**160**	15	67	34	**116**	38	**354**	**62**	**454**	**797**
Total Volume	29	225	78	332	103	458	32	593	49	262	134	445	169	1326	215	1710	3080
% App. Total	8.7	67.8	23.5		17.4	77.2	5.4		11	58.9	30.1		9.9	77.5	12.6		
PHF	.806	.792	.780	.790	.888	.874	.615	.927	.645	.949	.859	.959	.918	.936	.867	.942	.966

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City of Irwindale
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Groups Printed- Large 2 Axle Vehicles

	Vincent Avenue Southbound				Arrow Highway Westbound				Vincent Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.5	1.5	1.5		1.5	1.5	1.5		1.5	1.5	1.5		1.5	1.5	1.5		
04:00 PM	2	3	0	5	2	12	2	16	0	3	2	5	3	8	0	11	37
04:15 PM	2	3	4	9	2	3	0	5	3	3	0	6	2	4	0	6	26
04:30 PM	0	0	3	3	2	4	3	9	0	3	0	3	2	4	0	6	21
04:45 PM	0	4	0	4	0	2	0	2	0	0	0	0	3	3	0	6	12
Total	4	10	7	21	6	21	5	32	3	9	2	14	10	19	0	29	96
05:00 PM	2	4	2	8	0	2	0	2	0	0	0	0	3	2	0	5	15
05:15 PM	2	0	2	4	0	4	0	4	2	0	0	2	0	3	0	3	13
05:30 PM	0	3	2	5	0	4	0	4	0	3	0	3	0	2	0	2	14
05:45 PM	0	0	0	0	0	3	0	3	0	2	0	2	0	2	0	2	7
Total	4	7	6	17	0	13	0	13	2	5	0	7	3	9	0	12	49
Grand Total	8	17	13	38	6	34	5	45	5	14	2	21	13	28	0	41	145
Apprch %	21.1	44.7	34.2		13.3	75.6	11.1		23.8	66.7	9.5		31.7	68.3	0		
Total %	5.5	11.7	9	26.2	4.1	23.4	3.4	31	3.4	9.7	1.4	14.5	9	19.3	0	28.3	

	Vincent Avenue Southbound				Arrow Highway Westbound				Vincent Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	4	0	4	0	2	0	2	0	0	0	0	3	3	0	6	12
05:00 PM	2	4	2	8	0	2	0	2	0	0	0	0	3	2	0	5	15
05:15 PM	2	0	2	4	0	4	0	4	2	0	0	2	0	3	0	3	13
05:30 PM	0	3	2	5	0	4	0	4	0	3	0	3	0	2	0	2	14
Total Volume	4	11	6	21	0	12	0	12	2	3	0	5	6	10	0	16	54
% App. Total	19	52.4	28.6		0	100	0		40	60	0		37.5	62.5	0		
PHF	.500	.688	.750	.656	.000	.750	.000	.750	.250	.250	.000	.417	.500	.833	.000	.667	.900

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Groups Printed- 3 Axle Vehicles

	Vincent Avenue Southbound				Arrow Highway Westbound				Vincent Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	2.0	2.0	2.0		2.0	2.0	2.0		2.0	2.0	2.0		2.0	2.0	2.0		
04:00 PM	0	12	0	12	0	0	0	0	18	12	4	34	6	2	0	8	54
04:15 PM	0	6	2	8	0	2	0	2	8	8	4	20	8	2	0	10	40
04:30 PM	0	0	0	0	0	2	2	4	0	14	0	14	6	2	0	8	26
04:45 PM	0	0	0	0	0	2	0	2	0	14	0	14	14	2	0	16	32
Total	0	18	2	20	0	6	2	8	26	48	8	82	34	8	0	42	152
05:00 PM	0	0	6	6	0	0	0	0	2	4	0	6	6	0	2	8	20
05:15 PM	2	0	6	8	0	0	0	0	0	10	0	10	6	0	4	10	28
05:30 PM	0	0	0	0	0	0	0	0	0	8	2	10	6	0	0	6	16
05:45 PM	0	0	0	0	0	0	0	0	0	8	0	8	6	2	0	8	16
Total	2	0	12	14	0	0	0	0	2	30	2	34	24	2	6	32	80
Grand Total	2	18	14	34	0	6	2	8	28	78	10	116	58	10	6	74	232
Apprch %	5.9	52.9	41.2		0	75	25		24.1	67.2	8.6		78.4	13.5	8.1		
Total %	0.9	7.8	6	14.7	0	2.6	0.9	3.4	12.1	33.6	4.3	50	25	4.3	2.6	31.9	

	Vincent Avenue Southbound				Arrow Highway Westbound				Vincent Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	2	0	2	0	14	0	14	14	2	0	16	32
05:00 PM	0	0	6	6	0	0	0	0	2	4	0	6	6	0	2	8	20
05:15 PM	2	0	6	8	0	0	0	0	0	10	0	10	6	0	4	10	28
05:30 PM	0	0	0	0	0	0	0	0	0	8	2	10	6	0	0	6	16
Total Volume	2	0	12	14	0	2	0	2	2	36	2	40	32	2	6	40	96
% App. Total	14.3	0	85.7		0	100	0		5	90	5		80	5	15		
PHF	.250	.000	.500	.438	.000	.250	.000	.250	.250	.643	.250	.714	.571	.250	.375	.625	.750

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Groups Printed- 4+ Axle Trucks

	Vincent Avenue Southbound				Arrow Highway Westbound				Vincent Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0		
04:00 PM	0	3	0	3	0	6	0	6	0	0	0	0	0	0	0	0	9
04:15 PM	0	0	3	3	0	3	0	3	3	0	0	3	9	3	0	12	21
04:30 PM	0	0	3	3	0	3	0	3	0	0	0	0	0	6	0	6	12
04:45 PM	0	0	3	3	0	3	0	3	0	0	0	0	0	3	0	3	9
Total	0	3	9	12	0	15	0	15	3	0	0	3	9	12	0	21	51
05:00 PM	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
05:15 PM	0	0	0	0	0	0	0	0	6	0	0	6	0	3	0	3	9
05:30 PM	0	0	0	0	0	0	0	0	0	3	0	3	3	6	0	9	12
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	3	0	3	0	0	0	0	6	3	0	9	3	9	0	12	24
Grand Total	0	6	9	15	0	15	0	15	9	3	0	12	12	21	0	33	75
Apprch %	0	40	60		0	100	0		75	25	0		36.4	63.6	0		
Total %	0	8	12	20	0	20	0	20	12	4	0	16	16	28	0	44	

	Vincent Avenue Southbound				Arrow Highway Westbound				Vincent Avenue Northbound				Arrow Highway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	3	3	0	3	0	3	0	0	0	0	0	3	0	3	9
05:00 PM	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
05:15 PM	0	0	0	0	0	0	0	0	6	0	0	6	0	3	0	3	9
05:30 PM	0	0	0	0	0	0	0	0	0	3	0	3	3	6	0	9	12
Total Volume	0	3	3	6	0	3	0	3	6	3	0	9	3	12	0	15	33
% App. Total	0	50	50		0	100	0		66.7	33.3	0		20	80	0		
PHF	.000	.250	.250	.500	.000	.250	.000	.250	.250	.250	.000	.375	.250	.500	.000	.417	.688

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City of Covina
N/S: Irwindale Avenue
E/W: Cypress Street
Weather: Clear

File Name : CVAIRCYAM
Site Code : 01414253
Start Date : 7/9/2014
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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Irwindale Avenue Southbound				Cypress Street Westbound				Irwindale Avenue Northbound				Cypress Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	28	146	28	202	30	144	9	183	7	43	14	64	6	74	9	89	538
07:15 AM	26	127	41	194	26	185	14	225	8	28	5	41	14	81	7	102	562
07:30 AM	25	119	35	179	28	198	10	236	4	29	12	45	3	94	6	103	563
07:45 AM	25	148	38	211	31	212	13	256	12	43	14	69	10	119	9	138	674
Total	104	540	142	786	115	739	46	900	31	143	45	219	33	368	31	432	2337
08:00 AM	17	112	23	152	22	162	13	197	7	29	16	52	7	106	8	121	522
08:15 AM	13	92	33	138	34	158	9	201	5	38	15	58	9	105	6	120	517
08:30 AM	20	72	21	113	15	183	8	206	9	28	13	50	8	109	12	129	498
08:45 AM	20	72	24	116	13	144	15	172	9	25	6	40	8	105	7	120	448
Total	70	348	101	519	84	647	45	776	30	120	50	200	32	425	33	490	1985
Grand Total	174	888	243	1305	199	1386	91	1676	61	263	95	419	65	793	64	922	4322
Apprch %	13.3	68	18.6		11.9	82.7	5.4		14.6	62.8	22.7		7	86	6.9		
Total %	4	20.5	5.6	30.2	4.6	32.1	2.1	38.8	1.4	6.1	2.2	9.7	1.5	18.3	1.5	21.3	
Passenger Vehicles	168	864	239	1271	195	1342	87	1624	50	242	86	378	61	754	60	875	4148
% Passenger Vehicles	96.6	97.3	98.4	97.4	98	96.8	95.6	96.9	82	92	90.5	90.2	93.8	95.1	93.8	94.9	96
Large 2 Axle Vehicles	5	24	4	33	4	33	4	41	8	21	7	36	4	34	1	39	149
% Large 2 Axle Vehicles	2.9	2.7	1.6	2.5	2	2.4	4.4	2.4	13.1	8	7.4	8.6	6.2	4.3	1.6	4.2	3.4
3 Axle Vehicles	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	3
% 3 Axle Vehicles	0	0	0	0	0	0.2	0	0.2	0	0	0	0	0	0	0	0	0.1
4+ Axle Trucks	1	0	0	1	0	8	0	8	3	0	2	5	0	5	3	8	22
% 4+ Axle Trucks	0.6	0	0	0.1	0	0.6	0	0.5	4.9	0	2.1	1.2	0	0.6	4.7	0.9	0.5

	Irwindale Avenue Southbound				Cypress Street Westbound				Irwindale Avenue Northbound				Cypress Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	28	146	28	202	30	144	9	183	7	43	14	64	6	74	9	89	538
07:15 AM	26	127	41	194	26	185	14	225	8	28	5	41	14	81	7	102	562
07:30 AM	25	119	35	179	28	198	10	236	4	29	12	45	3	94	6	103	563
07:45 AM	25	148	38	211	31	212	13	256	12	43	14	69	10	119	9	138	674
Total Volume	104	540	142	786	115	739	46	900	31	143	45	219	33	368	31	432	2337
% App. Total	13.2	68.7	18.1		12.8	82.1	5.1		14.2	65.3	20.5		7.6	85.2	7.2		
PHF	.929	.912	.866	.931	.927	.871	.821	.879	.646	.831	.804	.793	.589	.773	.861	.783	.867

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E/W: Cypress Street
Weather: Clear

File Name : CVAIRCYAM
Site Code : 01414253
Start Date : 7/9/2014
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Groups Printed- Passenger Vehicles

	Irwindale Avenue Southbound				Cypress Street Westbound				Irwindale Avenue Northbound				Cypress Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
07:00 AM	27	145	28	200	29	141	7	177	5	42	10	57	6	73	8	87	521
07:15 AM	26	127	41	194	26	180	14	220	7	27	5	39	13	78	7	98	551
07:30 AM	24	113	34	171	27	191	9	227	1	26	11	38	3	89	4	96	532
07:45 AM	25	146	37	208	30	205	13	248	11	35	14	60	10	109	9	128	644
Total	102	531	140	773	112	717	43	872	24	130	40	194	32	349	28	409	2248
08:00 AM	16	102	22	140	21	157	13	191	5	25	14	44	7	99	8	114	489
08:15 AM	11	88	32	131	34	152	8	194	5	35	15	55	8	100	6	114	494
08:30 AM	19	71	21	111	15	177	8	200	8	27	12	47	7	105	11	123	481
08:45 AM	20	72	24	116	13	139	15	167	8	25	5	38	7	101	7	115	436
Total	66	333	99	498	83	625	44	752	26	112	46	184	29	405	32	466	1900
Grand Total	168	864	239	1271	195	1342	87	1624	50	242	86	378	61	754	60	875	4148
Apprch %	13.2	68	18.8		12	82.6	5.4		13.2	64	22.8		7	86.2	6.9		
Total %	4.1	20.8	5.8	30.6	4.7	32.4	2.1	39.2	1.2	5.8	2.1	9.1	1.5	18.2	1.4	21.1	

	Irwindale Avenue Southbound				Cypress Street Westbound				Irwindale Avenue Northbound				Cypress Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	27	145	28	200	29	141	7	177	5	42	10	57	6	73	8	87	521
07:15 AM	26	127	41	194	26	180	14	220	7	27	5	39	13	78	7	98	551
07:30 AM	24	113	34	171	27	191	9	227	1	26	11	38	3	89	4	96	532
07:45 AM	25	146	37	208	30	205	13	248	11	35	14	60	10	109	9	128	644
Total Volume	102	531	140	773	112	717	43	872	24	130	40	194	32	349	28	409	2248
% App. Total	13.2	68.7	18.1		12.8	82.2	4.9		12.4	67	20.6		7.8	85.3	6.8		
PHF	.944	.909	.854	.929	.933	.874	.768	.879	.545	.774	.714	.808	.615	.800	.778	.799	.873

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Groups Printed- Large 2 Axle Vehicles

	Irwindale Avenue Southbound				Cypress Street Westbound				Irwindale Avenue Northbound				Cypress Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.5	1.5	1.5		1.5	1.5	1.5		1.5	1.5	1.5		1.5	1.5	1.5		
07:00 AM	2	2	0	4	2	2	3	7	3	2	6	11	0	2	2	4	26
07:15 AM	0	0	0	0	0	6	0	6	2	2	0	4	2	4	0	6	16
07:30 AM	0	9	2	11	2	8	2	12	3	4	2	9	0	6	0	6	38
07:45 AM	0	3	2	5	2	10	0	12	2	12	0	14	0	14	0	14	45
Total	2	14	4	20	6	26	5	37	10	20	8	38	2	26	2	30	125
08:00 AM	2	15	2	19	2	4	0	6	2	6	3	11	0	9	0	9	45
08:15 AM	3	6	2	11	0	8	2	10	0	4	0	4	2	8	0	10	35
08:30 AM	2	2	0	4	0	8	0	8	0	2	0	2	2	4	0	6	20
08:45 AM	0	0	0	0	0	4	0	4	2	0	0	2	2	4	0	6	12
Total	7	23	4	34	2	24	2	28	4	12	3	19	6	25	0	31	112
Grand Total	9	37	8	54	8	50	7	65	14	32	11	57	8	51	2	61	237
Apprch %	16.7	68.5	14.8		12.3	76.9	10.8		24.6	56.1	19.3		13.1	83.6	3.3		
Total %	3.8	15.6	3.4	22.8	3.4	21.1	3	27.4	5.9	13.5	4.6	24.1	3.4	21.5	0.8	25.7	

	Irwindale Avenue Southbound				Cypress Street Westbound				Irwindale Avenue Northbound				Cypress Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	2	2	0	4	2	2	3	7	3	2	6	11	0	2	2	4	26
07:15 AM	0	0	0	0	0	6	0	6	2	2	0	4	2	4	0	6	16
07:30 AM	0	9	2	11	2	8	2	12	3	4	2	9	0	6	0	6	38
07:45 AM	0	3	2	5	2	10	0	12	2	12	0	14	0	14	0	14	45
Total Volume	2	14	4	20	6	26	5	37	10	20	8	38	2	26	2	30	125
% App. Total	10	70	20		16.2	70.3	13.5		26.3	52.6	21.1		6.7	86.7	6.7		
PHF	.250	.389	.500	.455	.750	.650	.417	.771	.833	.417	.333	.679	.250	.464	.250	.536	.694

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Groups Printed- 3 Axle Vehicles

	Irwindale Avenue Southbound				Cypress Street Westbound				Irwindale Avenue Northbound				Cypress Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	2.0	2.0	2.0		2.0	2.0	2.0		2.0	2.0	2.0		2.0	2.0	2.0		
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
08:00 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
08:15 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	4	0	4	0	0	0	0	0	0	0	0	4
Grand Total	0	0	0	0	0	6	0	6	0	0	0	0	0	0	0	0	6
Apprch %	0	0	0		0	100	0		0	0	0		0	0	0		
Total %	0	0	0	0	0	100	0	100	0	0	0	0	0	0	0	0	

	Irwindale Avenue Southbound				Cypress Street Westbound				Irwindale Avenue Northbound				Cypress Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
% App. Total	0	0	0		0	100	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.250

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City of Covina
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Groups Printed- 4+ Axle Trucks

	Irwindale Avenue Southbound				Cypress Street Westbound				Irwindale Avenue Northbound				Cypress Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0		
07:00 AM	0	0	0	0	0	6	0	6	0	0	0	0	0	0	0	0	6
07:15 AM	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	3
07:30 AM	3	0	0	3	0	3	0	3	3	0	0	3	0	3	6	9	18
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	3
Total	3	0	0	3	0	12	0	12	3	0	0	3	0	6	6	12	30
08:00 AM	0	0	0	0	0	3	0	3	3	0	0	3	0	3	0	3	9
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	3	0	3	3	0	3	6	0	3	3	6	15
08:45 AM	0	0	0	0	0	6	0	6	0	0	3	3	0	3	0	3	12
Total	0	0	0	0	0	12	0	12	6	0	6	12	0	9	3	12	36
Grand Total	3	0	0	3	0	24	0	24	9	0	6	15	0	15	9	24	66
Apprch %	100	0	0		0	100	0		60	0	40		0	62.5	37.5		
Total %	4.5	0	0	4.5	0	36.4	0	36.4	13.6	0	9.1	22.7	0	22.7	13.6	36.4	

	Irwindale Avenue Southbound				Cypress Street Westbound				Irwindale Avenue Northbound				Cypress Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	6	0	6	0	0	0	0	0	0	0	0	6
07:15 AM	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	3
07:30 AM	3	0	0	3	0	3	0	3	3	0	0	3	0	3	6	9	18
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	3
Total Volume	3	0	0	3	0	12	0	12	3	0	0	3	0	6	6	12	30
% App. Total	100	0	0		0	100	0		100	0	0		0	50	50		
PHF	.250	.000	.000	.250	.000	.500	.000	.500	.250	.000	.000	.250	.000	.500	.250	.333	.417

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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Irwindale Avenue Southbound				Cypress Street Westbound				Irwindale Avenue Northbound				Cypress Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	15	42	9	66	9	133	41	183	29	147	44	220	32	204	25	261	730
04:15 PM	24	45	11	80	7	132	25	164	36	143	40	219	24	175	15	214	677
04:30 PM	12	43	16	71	18	115	43	176	27	178	31	236	40	224	10	274	757
04:45 PM	17	40	10	67	14	120	24	158	16	159	26	201	46	221	17	284	710
Total	68	170	46	284	48	500	133	681	108	627	141	876	142	824	67	1033	2874
05:00 PM	14	50	10	74	13	122	37	172	25	198	18	241	55	301	11	367	854
05:15 PM	14	40	17	71	18	120	57	195	20	191	23	234	53	228	20	301	801
05:30 PM	27	32	14	73	14	109	29	152	17	164	32	213	49	213	14	276	714
05:45 PM	13	36	16	65	17	126	33	176	24	161	15	200	40	191	11	242	683
Total	68	158	57	283	62	477	156	695	86	714	88	888	197	933	56	1186	3052
Grand Total	136	328	103	567	110	977	289	1376	194	1341	229	1764	339	1757	123	2219	5926
Apprch %	24	57.8	18.2		8	71	21		11	76	13		15.3	79.2	5.5		
Total %	2.3	5.5	1.7	9.6	1.9	16.5	4.9	23.2	3.3	22.6	3.9	29.8	5.7	29.6	2.1	37.4	
Passenger Vehicles	136	323	103	562	109	961	285	1355	186	1335	226	1747	336	1728	112	2176	5840
% Passenger Vehicles	100	98.5	100	99.1	99.1	98.4	98.6	98.5	95.9	99.6	98.7	99	99.1	98.3	91.1	98.1	98.5
Large 2 Axle Vehicles	0	4	0	4	1	13	2	16	5	5	3	13	3	26	10	39	72
% Large 2 Axle Vehicles	0	1.2	0	0.7	0.9	1.3	0.7	1.2	2.6	0.4	1.3	0.7	0.9	1.5	8.1	1.8	1.2
3 Axle Vehicles	0	0	0	0	0	0	2	2	1	1	0	2	0	2	0	2	6
% 3 Axle Vehicles	0	0	0	0	0	0	0.7	0.1	0.5	0.1	0	0.1	0	0.1	0	0.1	0.1
4+ Axle Trucks	0	1	0	1	0	3	0	3	2	0	0	2	0	1	1	2	8
% 4+ Axle Trucks	0	0.3	0	0.2	0	0.3	0	0.2	1	0	0	0.1	0	0.1	0.8	0.1	0.1

	Irwindale Avenue Southbound				Cypress Street Westbound				Irwindale Avenue Northbound				Cypress Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	12	43	16	71	**18**	115	43	176	**27**	178	**31**	236	40	224	10	274	757
04:45 PM	**17**	40	10	67	14	120	24	158	16	159	26	201	46	221	17	284	710
05:00 PM	**14**	**50**	10	**74**	13	**122**	37	172	25	**198**	18	**241**	**55**	**301**	11	**367**	**854**
05:15 PM	14	40	**17**	71	18	120	**57**	**195**	20	191	23	234	53	228	**20**	301	801
Total Volume	57	173	53	283	63	477	161	701	88	726	98	912	194	974	58	1226	3122
% App. Total	20.1	61.1	18.7		9	68	23		9.6	79.6	10.7		15.8	79.4	4.7		
PHF	.838	.865	.779	.956	.875	.977	.706	.899	.815	.917	.790	.946	.882	.809	.725	.835	.914

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92880
(951) 268-6268

City of Covina
N/S: Irwindale Avenue
E/W: Cypress Street
Weather: Clear

File Name : CVAIRCYPM
Site Code : 01414253
Start Date : 7/9/2014
Page No : 1

Groups Printed- Passenger Vehicles

	Irwindale Avenue Southbound				Cypress Street Westbound				Irwindale Avenue Northbound				Cypress Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
04:00 PM	15	41	9	65	9	127	40	176	29	145	43	217	32	201	24	257	715
04:15 PM	24	45	11	80	7	129	25	161	36	141	40	217	24	169	9	202	660
04:30 PM	12	43	16	71	18	115	43	176	24	178	29	231	39	222	8	269	747
04:45 PM	17	38	10	65	13	118	24	155	15	159	26	200	44	213	17	274	694
Total	68	167	46	281	47	489	132	668	104	623	138	865	139	805	58	1002	2816
05:00 PM	14	48	10	72	13	121	37	171	23	197	18	238	55	297	11	363	844
05:15 PM	14	40	17	71	18	118	56	192	20	191	23	234	53	227	20	300	797
05:30 PM	27	32	14	73	14	109	28	151	15	163	32	210	49	208	13	270	704
05:45 PM	13	36	16	65	17	124	32	173	24	161	15	200	40	191	10	241	679
Total	68	156	57	281	62	472	153	687	82	712	88	882	197	923	54	1174	3024
Grand Total	136	323	103	562	109	961	285	1355	186	1335	226	1747	336	1728	112	2176	5840
Apprch %	24.2	57.5	18.3		8	70.9	21		10.6	76.4	12.9		15.4	79.4	5.1		
Total %	2.3	5.5	1.8	9.6	1.9	16.5	4.9	23.2	3.2	22.9	3.9	29.9	5.8	29.6	1.9	37.3	

	Irwindale Avenue Southbound				Cypress Street Westbound				Irwindale Avenue Northbound				Cypress Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	12	43	16	71	18	115	43	176	24	178	29	231	39	222	8	269	747
04:45 PM	17	38	10	65	13	118	24	155	15	159	26	200	44	213	17	274	694
05:00 PM	14	48	10	72	13	121	37	171	23	197	18	238	55	297	11	363	844
05:15 PM	14	40	17	71	18	118	56	192	20	191	23	234	53	227	20	300	797
Total Volume	57	169	53	279	62	472	160	694	82	725	96	903	191	959	56	1206	3082
% App. Total	20.4	60.6	19		8.9	68	23.1		9.1	80.3	10.6		15.8	79.5	4.6		
PHF	.838	.880	.779	.969	.861	.975	.714	.904	.854	.920	.828	.949	.868	.807	.700	.831	.913

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City of Covina
N/S: Irwindale Avenue
E/W: Cypress Street
Weather: Clear

File Name : CVAIRCYPM
Site Code : 01414253
Start Date : 7/9/2014
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Groups Printed- Large 2 Axle Vehicles

	Irwindale Avenue Southbound				Cypress Street Westbound				Irwindale Avenue Northbound				Cypress Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.5	1.5	1.5		1.5	1.5	1.5		1.5	1.5	1.5		1.5	1.5	1.5		
04:00 PM	0	2	0	2	0	4	2	6	0	2	2	4	0	4	2	6	18
04:15 PM	0	0	0	0	0	4	0	4	0	3	0	3	0	8	9	17	24
04:30 PM	0	0	0	0	0	0	0	0	0	0	3	3	2	3	2	7	10
04:45 PM	0	2	0	2	2	3	0	5	2	0	0	2	3	12	0	15	24
Total	0	4	0	4	2	11	2	15	2	5	5	12	5	27	13	45	76
05:00 PM	0	3	0	3	0	2	0	2	3	2	0	5	0	3	0	3	13
05:15 PM	0	0	0	0	0	3	0	3	0	0	0	0	0	2	0	2	5
05:30 PM	0	0	0	0	0	0	0	0	3	2	0	5	0	8	2	10	15
05:45 PM	0	0	0	0	0	3	2	5	0	0	0	0	0	0	2	2	7
Total	0	3	0	3	0	8	2	10	6	4	0	10	0	13	4	17	40
Grand Total	0	7	0	7	2	19	4	25	8	9	5	22	5	40	17	62	116
Apprch %	0	100	0		8	76	16		36.4	40.9	22.7		8.1	64.5	27.4		
Total %	0	6	0	6	1.7	16.4	3.4	21.6	6.9	7.8	4.3	19	4.3	34.5	14.7	53.4	

	Irwindale Avenue Southbound				Cypress Street Westbound				Irwindale Avenue Northbound				Cypress Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	0	3	3	2	3	2	7	10
04:45 PM	0	2	0	2	2	3	0	5	2	0	0	2	3	12	0	15	24
05:00 PM	0	3	0	3	0	2	0	2	3	2	0	5	0	3	0	3	13
05:15 PM	0	0	0	0	0	3	0	3	0	0	0	0	0	2	0	2	5
Total Volume	0	5	0	5	2	8	0	10	5	2	3	10	5	20	2	27	52
% App. Total	0	100	0		20	80	0		50	20	30		18.5	74.1	7.4		
PHF	.000	.417	.000	.417	.250	.667	.000	.500	.417	.250	.250	.500	.417	.417	.250	.450	.542

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City of Covina
N/S: Irwindale Avenue
E/W: Cypress Street
Weather: Clear

File Name : CVAIRCYPM
Site Code : 01414253
Start Date : 7/9/2014
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Groups Printed- 3 Axle Vehicles

	Irwindale Avenue Southbound				Cypress Street Westbound				Irwindale Avenue Northbound				Cypress Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	2.0	2.0	2.0		2.0	2.0	2.0		2.0	2.0	2.0		2.0	2.0	2.0		
04:00 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
04:30 PM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	2
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	2	2	0	4	0	2	0	2	6
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
05:15 PM	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	2
05:30 PM	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	2
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	4	4	0	0	0	0	0	2	0	2	6
Grand Total	0	0	0	0	0	0	4	4	2	2	0	4	0	4	0	4	12
Apprch %	0	0	0		0	0	100		50	50	0		0	100	0		
Total %	0	0	0	0	0	0	33.3	33.3	16.7	16.7	0	33.3	0	33.3	0	33.3	

	Irwindale Avenue Southbound				Cypress Street Westbound				Irwindale Avenue Northbound				Cypress Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	2
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
05:15 PM	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	2
Total Volume	0	0	0	0	0	0	2	2	2	0	0	2	0	2	0	2	6
% App. Total	0	0	0		0	0	100		100	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.250	.250	.000	.000	.250	.000	.250	.000	.250	.750

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City of Covina
N/S: Irwindale Avenue
E/W: Cypress Street
Weather: Clear

File Name : CVAIRCYPM
Site Code : 01414253
Start Date : 7/9/2014
Page No : 1

Groups Printed- 4+ Axle Trucks

	Irwindale Avenue Southbound				Cypress Street Westbound				Irwindale Avenue Northbound				Cypress Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0		
04:00 PM	0	0	0	0	0	9	0	9	0	0	0	0	0	0	0	0	9
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	6	0	0	6	0	0	3	3	9
04:45 PM	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
Total	0	3	0	3	0	9	0	9	6	0	0	6	0	0	3	3	21
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	3
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	3
Grand Total	0	3	0	3	0	9	0	9	6	0	0	6	0	3	3	6	24
Apprch %	0	100	0		0	100	0		100	0	0		0	50	50		
Total %	0	12.5	0	12.5	0	37.5	0	37.5	25	0	0	25	0	12.5	12.5	25	

	Irwindale Avenue Southbound				Cypress Street Westbound				Irwindale Avenue Northbound				Cypress Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	6	0	0	6	0	0	3	3	9
04:45 PM	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	3
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	3	0	3	0	0	0	0	6	0	0	6	0	3	3	6	15
% App. Total	0	100	0		0	0	0		100	0	0		0	50	50		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.250	.000	.000	.250	.000	.250	.250	.500	.417

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City of Irwindale
Arrow Highway
B/Live Oak Avenue - Azusa Canyon Road
24 Hour Directional Volume Count

IRW007
Site Code: 014-14253

Start Time	09-Jul-14 Wed	Eastbound Morning	Eastbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Westbound Morning	Westbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		35	235			50	192				
12:15		22	232			27	217				
12:30		17	259			19	218				
12:45		22	246	96	972	23	220	119	847	215	1819
01:00		20	236			38	196				
01:15		14	230			22	227				
01:30		18	228			21	240				
01:45		15	237	67	931	16	203	97	866	164	1797
02:00		15	251			19	263				
02:15		16	289			14	206				
02:30		19	347			20	288				
02:45		16	348	66	1235	26	265	79	1022	145	2257
03:00		23	368			26	240				
03:15		22	334			34	227				
03:30		24	386			37	280				
03:45		34	418	103	1506	46	236	143	983	246	2489
04:00		27	410			43	296				
04:15		41	460			52	244				
04:30		54	475			81	**286**				
04:45		92	456	214	1801	84	**203**	260	1029	474	2830
05:00		73	**462**			106	**345**				
05:15		111	**501**			177	**266**				
05:30		151	**489**			293	248				
05:45		171	**493**	506	1945	305	230	881	1089	1387	3034
06:00		117	408			342	219				
06:15		122	390			371	196				
06:30		208	370			480	159				
06:45		200	296	647	1464	**511**	177	1704	751	2351	2215
07:00		177	245			**524**	136				
07:15		209	234			**474**	120				
07:30		203	194			**536**	134				
07:45		**230**	152	819	825	500	124	2034	514	2853	1339
08:00		**244**	123			453	116				
08:15		**245**	127			437	119				
08:30		**241**	112			371	109				
08:45		189	121	919	483	309	100	1570	444	2489	927
09:00		193	92			281	77				
09:15		198	89			227	98				
09:30		168	85			207	111				
09:45		218	83	777	349	249	78	964	364	1741	713
10:00		161	62			235	88				
10:15		199	84			204	61				
10:30		178	77			235	64				
10:45		204	62	742	285	221	65	895	278	1637	563
11:00		147	61			218	77				
11:15		236	38			201	45				
11:30		222	42			173	84				
11:45		205	28	810	169	234	37	826	243	1636	412
Total		5766	11965	5766	11965	9572	8430	9572	8430	15338	20395
Combined Total		17731		17731		18002		18002		35733	
AM Peak	-	07:45	-	-	-	06:45	-	-	-	-	-
Vol.	-	960	-	-	-	2045	-	-	-	-	-
P.H.F.		0.980				0.954					
PM Peak	-	-	05:00	-	-	-	04:30	-	-	-	-
Vol.	-	-	1945	-	-	-	1100	-	-	-	-
P.H.F.			0.971				0.797				
Percentage		32.5%	67.5%			53.2%	46.8%				
ADT/AADT		ADT 35,733		AADT 35,733							

Counts Unlimited, Inc

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City of Irwindale
Irwindale Avenue
B/ Arrow Highway - Gladstone Street
24 Hour Directional Volume Count

IRW004
Site Code: 014-14253

Start Time	09-Jul-14 Wed	Northbound Morning	Northbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Southbound Morning	Southbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		42	214			17	239				
12:15		17	234			20	230				
12:30		15	225			35	208				
12:45		16	207	90	880	27	187	99	864	189	1744
01:00		23	222			19	216				
01:15		19	212			18	208				
01:30		23	218			18	219				
01:45		18	221	83	873	14	218	69	861	152	1734
02:00		15	220			22	242				
02:15		25	226			19	240				
02:30		18	251			24	320				
02:45		15	231	73	928	27	259	92	1061	165	1989
03:00		31	213			30	258				
03:15		36	217			28	243				
03:30		45	**253**			39	308				
03:45		51	**237**	163	920	41	246	138	1055	301	1975
04:00		30	**259**			33	324				
04:15		51	**250**			37	243				
04:30		56	237			65	**313**				
04:45		73	246	210	992	72	**273**	207	1153	417	2145
05:00		88	250			78	**355**				
05:15		105	246			95	**293**				
05:30		197	232			130	267				
05:45		215	224	605	952	146	250	449	1165	1054	2117
06:00		180	193			119	218				
06:15		177	191			142	242				
06:30		192	183			198	190				
06:45		**234**	149	783	716	210	157	669	807	1452	1523
07:00		**198**	162			189	158				
07:15		**226**	123			181	156				
07:30		**232**	132			224	164				
07:45		232	98	888	515	**257**	127	851	605	1739	1120
08:00		193	97			**219**	131				
08:15		205	112			**233**	106				
08:30		188	87			**245**	108				
08:45		181	88	767	384	227	112	924	457	1691	841
09:00		162	78			177	86				
09:15		163	80			187	83				
09:30		155	80			168	101				
09:45		185	86	665	324	165	80	697	350	1362	674
10:00		178	70			188	90				
10:15		148	61			192	66				
10:30		171	53			194	83				
10:45		142	44	639	228	168	51	742	290	1381	518
11:00		145	41			188	54				
11:15		174	36			173	46				
11:30		173	46			185	59				
11:45		176	21	668	144	216	35	762	194	1430	338
Total		5634	7856	5634	7856	5699	8862	5699	8862	11333	16718
Combined Total		13490		13490		14561		14561		28051	
AM Peak	-	06:45	-	-	-	07:45	-	-	-	-	-
Vol.	-	890	-	-	-	954	-	-	-	-	-
P.H.F.		0.951				0.928					
PM Peak	-	-	03:30	-	-	-	04:30	-	-	-	-
Vol.	-	-	999	-	-	-	1234	-	-	-	-
P.H.F.			0.964				0.869				
Percentage		41.8%	58.2%			39.1%	60.9%				
ADT/AADT		ADT 28,051		AADT 28,051							

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City of Irwindale
Irwindale Avenue
B/ Cypress Avenue - Arrow Highway
24 Hour Directional Volume Count

IRW003
Site Code: 014-14253

Start Time	09-Jul-14 Wed	Northbound Morning	Northbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Southbound Morning	Southbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		28	169			26	145				
12:15		15	170			16	160				
12:30		17	152			29	140				
12:45		14	173	74	664	13	144	84	589	158	1253
01:00		15	150			17	149				
01:15		30	154			13	140				
01:30		19	162			15	164				
01:45		15	175	79	641	11	150	56	603	135	1244
02:00		18	163			14	146				
02:15		19	161			7	157				
02:30		16	184			10	220				
02:45		13	180	66	688	14	180	45	703	111	1391
03:00		16	152			9	195				
03:15		22	145			23	169				
03:30		28	157			16	213				
03:45		30	180	96	634	15	171	63	748	159	1382
04:00		30	191			12	216				
04:15		25	163			23	183				
04:30		58	174			29	**244**				
04:45		72	**166**	185	694	47	**207**	111	850	296	1544
05:00		75	**195**			42	**236**				
05:15		91	**214**			41	**225**				
05:30		137	**184**			53	215				
05:45		154	162	457	755	65	178	201	854	658	1609
06:00		114	163			53	187				
06:15		135	147			80	213				
06:30		168	147			86	156				
06:45		176	139	593	596	106	144	325	700	918	1296
07:00		**185**	139			109	116				
07:15		**194**	99			106	118				
07:30		**181**	106			129	139				
07:45		**218**	91	778	435	**158**	116	502	489	1280	924
08:00		148	88			**134**	114				
08:15		151	90			**157**	96				
08:30		154	68			**143**	82				
08:45		127	99	580	345	157	82	591	374	1171	719
09:00		136	82			125	72				
09:15		136	101			126	71				
09:30		126	89			114	72				
09:45		139	68	537	340	127	67	492	282	1029	622
10:00		135	49			126	71				
10:15		130	60			125	63				
10:30		127	41			132	67				
10:45		143	61	535	211	106	45	489	246	1024	457
11:00		153	50			109	42				
11:15		141	35			117	37				
11:30		151	30			109	46				
11:45		143	28	588	143	146	22	481	147	1069	290
Total		4568	6146	4568	6146	3440	6585	3440	6585	8008	12731
Combined Total		10714		10714		10025		10025		20739	
AM Peak	-	07:00	-	-	-	07:45	-	-	-	-	-
Vol.	-	778	-	-	-	592	-	-	-	-	-
P.H.F.		0.892				0.937					
PM Peak	-	-	04:45	-	-	-	04:30	-	-	-	-
Vol.	-	-	759	-	-	-	912	-	-	-	-
P.H.F.			0.887				0.934				
Percentage		42.6%	57.4%			34.3%	65.7%				
ADT/AADT		ADT 20,739		AADT 20,739							

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City of Irwindale
Arrow Highway
B/ Azusa Canyon Road - Irwindale Avenue
24 Hour Directional Volume Count

IRW002
Site Code: 014-14253

Start Time	09-Jul-14 Wed	Eastbound Morning	Eastbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Westbound Morning	Westbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		59	241			20	205				
12:15		21	224			20	224				
12:30		23	263			16	221				
12:45		18	258	121	986	19	221	75	871	196	1857
01:00		27	245			24	229				
01:15		12	228			18	235				
01:30		15	232			18	226				
01:45		12	224	66	929	9	196	69	886	135	1815
02:00		15	273			19	**253**				
02:15		14	251			20	**226**				
02:30		19	322			24	**249**				
02:45		16	312	64	1158	26	**258**	89	986	153	2144
03:00		27	328			29	222				
03:15		23	349			33	225				
03:30		19	394			38	241				
03:45		25	389	94	1460	50	221	150	909	244	2369
04:00		23	408			45	236				
04:15		48	422			51	225				
04:30		54	435			91	259				
04:45		94	452	219	1717	89	195	276	915	495	2632
05:00		77	**467**			115	279				
05:15		77	**485**			199	228				
05:30		110	**464**			280	216				
05:45		154	**459**	418	1875	329	202	923	925	1341	2800
06:00		117	395			287	192				
06:15		102	366			320	199				
06:30		172	362			412	148				
06:45		163	298	554	1421	**455**	158	1474	697	2028	2118
07:00		173	274			**451**	137				
07:15		169	220			**379**	125				
07:30		**193**	212			**447**	132				
07:45		**214**	164	749	870	426	108	1703	502	2452	1372
08:00		**202**	142			376	118				
08:15		**199**	134			372	108				
08:30		180	103			351	111				
08:45		184	134	765	513	288	101	1387	438	2152	951
09:00		176	92			251	108				
09:15		180	100			241	94				
09:30		153	101			209	117				
09:45		209	90	718	383	243	82	944	401	1662	784
10:00		185	75			218	81				
10:15		181	83			217	58				
10:30		184	78			212	59				
10:45		167	60	717	296	221	68	868	266	1585	562
11:00		162	76			205	64				
11:15		189	49			210	53				
11:30		213	64			195	64				
11:45		211	32	775	221	224	28	834	209	1609	430
Total		5260	11829	5260	11829	8792	8005	8792	8005	14052	19834
Combined Total		17089		17089		16797		16797		33886	
AM Peak	-	07:30	-	-	-	06:45	-	-	-	-	-
Vol.	-	808	-	-	-	1732	-	-	-	-	-
P.H.F.		0.944				0.952					
PM Peak	-	-	05:00	-	-	-	02:00	-	-	-	-
Vol.	-	-	1875	-	-	-	986	-	-	-	-
P.H.F.			0.966				0.955				
Percentage		30.8%	69.2%			52.3%	47.7%				
ADT/AADT		ADT 33,886		AADT 33,886							

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City of Irwindale
Arrow Highway
W/ Vincent Avenue
24 Hour Directional Volume Count

IRW001
Site Code: 014-14253

Start Time	09-Jul-14 Wed	Eastbound Morning	Eastbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Westbound Morning	Westbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		46	206			14	162				
12:15		21	193			18	**173**				
12:30		27	200			11	**175**				
12:45		16	188	110	787	8	**213**	51	723	161	1510
01:00		15	180			10	**199**				
01:15		15	184			9	157				
01:30		11	146			14	158				
01:45		8	141	49	651	4	162	37	676	86	1327
02:00		9	208			7	175				
02:15		9	192			9	147				
02:30		17	256			6	162				
02:45		13	274	48	930	14	146	36	630	84	1560
03:00		16	244			19	157				
03:15		16	309			22	148				
03:30		6	283			25	184				
03:45		12	338	50	1174	37	152	103	641	153	1815
04:00		20	355			31	182				
04:15		19	366			35	144				
04:30		21	401			83	155				
04:45		37	387	97	1509	90	173	239	654	336	2163
05:00		47	**410**			100	172				
05:15		47	**453**			161	151				
05:30		52	**419**			235	139				
05:45		80	**406**	226	1688	288	141	784	603	1010	2291
06:00		63	347			267	136				
06:15		77	322			307	136				
06:30		117	337			345	119				
06:45		107	290	364	1296	**381**	109	1300	500	1664	1796
07:00		103	254			**341**	115				
07:15		101	209			**310**	98				
07:30		142	189			**347**	81				
07:45		127	152	473	804	350	73	1348	367	1821	1171
08:00		123	130			278	79				
08:15		120	121			298	98				
08:30		123	110			256	73				
08:45		119	102	485	463	264	75	1096	325	1581	788
09:00		121	87			232	75				
09:15		130	77			192	66				
09:30		102	92			157	82				
09:45		146	77	499	333	152	66	733	289	1232	622
10:00		147	54			158	47				
10:15		136	80			152	58				
10:30		137	80			147	45				
10:45		119	52	539	266	167	35	624	185	1163	451
11:00		**151**	60			135	34				
11:15		**150**	49			130	34				
11:30		**162**	49			145	26				
11:45		**145**	35	608	193	159	17	569	111	1177	304
Total		3548	10094	3548	10094	6920	5704	6920	5704	10468	15798
Combined Total		13642		13642		12624		12624		26266	
AM Peak	-	11:00	-	-	-	06:45	-	-	-	-	-
Vol.	-	608	-	-	-	1379	-	-	-	-	-
P.H.F.		0.938				0.905					
PM Peak	-	-	05:00	-	-	-	00:15	-	-	-	-
Vol.	-	-	1688	-	-	-	760	-	-	-	-
P.H.F.			0.932				0.892				
Percentage		26.0%	74.0%			54.8%	45.2%				
ADT/AADT		ADT 26,266		AADT 26,266							

PCE CONVERSION TABLE

Intersection: Arrow Highway & Live Oaks Avenue / Arrow Highway

AM PEAK HOUR

						ADJUSTED FOR PCE FACTOR					
Movement	Total Volume	Passenger Volume	2-Axle Buses/Trucks	3-Axle Trucks	4+-Axle Trucks	Passenger Volume (1.0 PCE)	2-Axle Buses/Trucks (1.5 PCE)	3-Axle Trucks (2.0 PCE)	4+-Axle Trucks (3.0 PCE)	Total PCE Volume	Ambient Future Volume
NL	0	0	0	0	0	0	0	0	0	0	0
NT	0	0	0	0	0	0	0	0	0	0	0
NR	0	0	0	0	0	0	0	0	0	0	0
SL	308	277	34	2	21	277	51	4	63	395	403
ST	0	0	0	0	0	0	0	0	0	0	0
SR	43	37	6	4	0	37	9	8	0	54	55
EL	79	76	4	0	3	76	6	0	9	91	93
ET	659	584	51	18	96	584	77	36	288	985	1004
ER	0	0	0	0	0	0	0	0	0	0	0
WL	0	0	0	0	0	0	0	0	0	0	0
WT	1170	1078	52	44	108	1078	78	88	324	1568	1599
WR	1304	1269	47	2	9	1269	71	4	27	1371	1398
TOTAL	**3563**	**3321**	**194**	**70**	**237**	**3321**	**291**	**140**	**711**	**4463**	**4552**

NOTE: Percent increase to obtain Ambient Future Volume: 1.02

PCE CONVERSION TABLE

Intersection: ARROW HIGHWAY + LIVE OAK AVE / ARROW HWY

PM PEAK HOUR

						ADJUSTED FOR PCE FACTOR					
Movement	**Total Volume**	**Passenger Volume**	**2-Axle Buses/Trucks**	**3-Axle Trucks**	**4+-Axle Trucks**	**Passenger Volume (1.0 PCE)**	**2-Axle Buses/Trucks (1.5 PCE)**	**3-Axle Trucks (2.0 PCE)**	**4+-Axle Trucks (3.0 PCE)**	**Total PCE Volume**	**Ambient Future Volume**
NL	0	0	0	0	0	0	0	0	0	0	0
NT	0	0	0	0	0	0	0	0	0	0	0
NR	0	0	0	0	0	0	0	0	0	0	0
SL	982	956	15	20	18	956	23	40	54	1073	1094
ST	0	0	0	0	0	0	0	0	0	0	0
SR	112	110	2	0	3	110	3	0	9	122	124
							0		0		
EL	44	44	0	0	0	44	0	0	0	44	45
ET	1470	1411	45	40	27	1411	68	80	81	1640	1672
ER	0	0	0	0	0	0	0	0	0	0	0
WL	0	0	0	0	0	0	0	0	0	0	0
WT	764	720	29	22	42	720	44	44	126	934	952
WR	440	425	8	20	0	425	12	40	0	477	487
TOTAL	**3812**	**3666**	**99**	**102**	**90**	**3666**	**149**	**204**	**270**	**4289**	**4374**

NOTE: Percent increase to obtain Ambient Future Volume: 1.02

PCE CONVERSION TABLE

Intersection: Azusa Canyon Road & Arrow Highway

AM PEAK HOUR

						ADJUSTED FOR PCE FACTOR					
Movement	**Total Volume**	**Passenger Volume**	**2-Axle Buses/Trucks**	**3-Axle Trucks**	**4+-Axle Trucks**	**Passenger Volume (1.0 PCE)**	**2-Axle Buses/Trucks (1.5 PCE)**	**3-Axle Trucks (2.0 PCE)**	**4+-Axle Trucks (3.0 PCE)**	**Total PCE Volume**	**Ambient Future Volume**
NL	467	427	40	26	3	427	60	52	9	548	559
NT	15	13	4	0	0	13	6	0	0	19	19
NR	144	116	38	4	3	116	57	8	9	190	194
SL	8	5	4	0	3	5	6	0	9	20	20
ST	8	7	2	0	0	7	3	0	0	10	10
SR	15	14	0	2	0	14	0	4	0	18	18
EL	14	14	0	0	0	14	0	0	0	14	14
ET	675	567	111	14	84	567	167	28	252	1014	1034
ER	84	72	12	2	9	72	18	4	27	121	123
WL	66	60	8	0	3	60	12	0	9	81	83
WT	1563	1434	126	38	78	1434	189	76	234	1933	1972
WR	15	12	4	0	3	12	6	0	9	27	28
TOTAL	**3074**	**2741**	**349**	**86**	**186**	**2741**	**524**	**172**	**558**	**3995**	**4074**

NOTE: Percent increase to obtain Ambient Future Volume: 1.02

PCE CONVERSION TABLE

Intersection: Azusa Canyon Road & Arrow Highway

PM PEAK HOUR

						ADJUSTED FOR PCE FACTOR					
Movement	Total Volume	Passenger Volume	2-Axle Buses/Trucks	3-Axle Trucks	4+-Axle Trucks	Passenger Volume (1.0 PCE)	2-Axle Buses/Trucks (1.5 PCE)	3-Axle Trucks (2.0 PCE)	4+-Axle Trucks (3.0 PCE)	Total PCE Volume	Ambient Future Volume
NL	128	126	4	0	0	126	6	0	0	132	135
NT	10	10	0	0	0	10	0	0	0	10	10
NR	153	149	4	2	3	149	6	4	9	168	171
SL	12	12	0	0	0	12	0	0	0	12	12
ST	8	7	2	0	0	7	3	0	0	10	10
SR	25	24	2	0	0	24	3	0	0	27	28
EL	15	14	2	0	0	14	3	0	0	17	17
ET	1737	1647	87	48	24	1647	131	96	72	1946	1984
ER	186	173	12	10	0	173	18	20	0	211	215
WL	135	131	8	0	0	131	12	0	0	143	146
WT	942	875	56	46	21	875	84	92	63	1114	1136
WR	10	10	0	0	0	10	0	0	0	10	10
TOTAL	**3361**	**3178**	**177**	**106**	**48**	**3178**	**266**	**212**	**144**	**3800**	**3875**

NOTE: Percent increase to obtain Ambient Future Volume: 1.02

PCE CONVERSION TABLE

Intersection: Irwindale Avenue & Arrow Highway

AM PEAK HOUR

						ADJUSTED FOR PCE FACTOR					
Movement	Total Volume	Passenger Volume	2-Axle Buses/Trucks	3-Axle Trucks	4+-Axle Trucks	Passenger Volume (1.0 PCE)	2-Axle Buses/Trucks (1.5 PCE)	3-Axle Trucks (2.0 PCE)	4+-Axle Trucks (3.0 PCE)	Total PCE Volume	Ambient Future Volume
NL	206	202	4	0	6	202	6	0	18	226	231
NT	551	532	19	4	12	532	29	8	36	605	617
NR	26	25	2	0	0	25	3	0	0	28	29
SL	53	46	9	0	6	46	14	0	18	78	79
ST	392	377	17	0	9	377	26	0	27	430	438
SR	377	346	16	18	33	346	24	36	99	505	515
EL	268	248	13	18	6	248	20	36	18	322	328
ET	371	319	48	12	45	319	72	24	135	550	561
ER	54	50	4	2	3	50	6	4	9	69	70
WL	44	40	5	2	0	40	8	4	0	52	53
WT	1078	1031	42	16	30	1031	63	32	90	1216	1240
WR	128	121	8	2	3	121	12	4	9	146	149
TOTAL	**3548**	**3337**	**187**	**74**	**153**	**3337**	**281**	**148**	**459**	**4225**	**4309**

NOTE: Percent increase to obtain Ambient Future Volume: 1.02

PCE CONVERSION TABLE

Intersection: Irwindale Avenue & Arrow Highway

PM PEAK HOUR

						ADJUSTED FOR PCE FACTOR					
Movement	**Total Volume**	**Passenger Volume**	**2-Axle Buses/Trucks**	**3-Axle Trucks**	**4+-Axle Trucks**	**Passenger Volume (1.0 PCE)**	**2-Axle Buses/Trucks (1.5 PCE)**	**3-Axle Trucks (2.0 PCE)**	**4+-Axle Trucks (3.0 PCE)**	**Total PCE Volume**	**Ambient Future Volume**
NL	87	87	0	0	0	87	0	0	0	87	89
NT	563	556	8	0	6	556	12	0	18	586	598
NR	92	89	6	0	0	89	9	0	0	98	100
SL	181	181	0	0	0	181	0	0	0	181	185
ST	765	749	21	2	3	749	32	4	9	794	809
SR	367	328	21	24	39	328	32	48	117	525	535
EL	454	423	15	32	15	423	23	64	45	555	566
ET	1437	1392	26	34	30	1392	39	68	90	1589	1621
ER	131	128	3	0	3	128	5	0	9	142	144
									0		
WL	86	83	4	0	3	83	6	0	9	98	100
WT	468	439	23	20	12	439	35	40	36	550	560
WR	75	74	2	0	0	74	3	0	0	77	79
TOTAL	**4706**	**4529**	**129**	**112**	**111**	**4529**	**194**	**224**	**333**	**5280**	**5385**

NOTE: Percent increase to obtain Ambient Future Volume: 1.02

PCE CONVERSION TABLE

Intersection: Irwindale Avenue & Cypress Street

AM PEAK HOUR

						ADJUSTED FOR PCE FACTOR					
Movement	**Total Volume**	**Passenger Volume**	**2-Axle Buses/Trucks**	**3-Axle Trucks**	**4+-Axle Trucks**	**Passenger Volume (1.0 PCE)**	**2-Axle Buses/Trucks (1.5 PCE)**	**3-Axle Trucks (2.0 PCE)**	**4+-Axle Trucks (3.0 PCE)**	**Total PCE Volume**	**Ambient Future Volume**
NL	31	24	10	0	3	24	15	0	9	48	49
NT	143	130	20	0	0	130	30	0	0	160	163
NR	45	40	8	0	0	40	12	0	0	52	53
SL	104	102	2	0	3	102	3	0	9	114	116
ST	540	531	14	0	0	531	21	0	0	552	563
SR	142	140	4	0	0	140	6	0	0	146	149
									0		
EL	33	32	2	0	0	32	3	0	0	35	36
ET	368	349	26	0	6	349	39	0	18	406	414
ER	31	28	2	0	6	28	3	0	18	49	50
							0				
WL	115	112	6	0	0	112	9	0	0	121	123
WT	739	717	26	2	12	717	39	4	36	796	812
WR	46	43	5	0	0	43	8	0	0	51	52
TOTAL	**2337**	**2248**	**125**	**2**	**30**	**2248**	**188**	**4**	**90**	**2530**	**2580**

NOTE: Percent increase to obtain Ambient Future Volume: 1.02

PCE CONVERSION TABLE

Intersection: Irwindale Avenue & Cypress Street

PM PEAK HOUR

						ADJUSTED FOR PCE FACTOR					
Movement	**Total Volume**	**Passenger Volume**	**2-Axle Buses/Trucks**	**3-Axle Trucks**	**4+-Axle Trucks**	**Passenger Volume (1.0 PCE)**	**2-Axle Buses/Trucks (1.5 PCE)**	**3-Axle Trucks (2.0 PCE)**	**4+-Axle Trucks (3.0 PCE)**	**Total PCE Volume**	**Ambient Future Volume**
NL	88	82	5	2	6	82	8	4	18	112	114
NT	726	725	2	0	0	725	3	0	0	728	743
NR	98	96	3	0	0	96	5	0	0	101	103
SL	57	57	0	0	0	57	0	0	0	57	58
ST	173	169	5	0	3	169	8	0	9	186	189
SR	53	53	0	0	0	53	0	0	0	53	54
EL	194	191	5	0	0	191	8	0	0	199	202
ET	974	959	20	2	3	959	30	4	9	1002	1022
ER	58	56	2	0	3	56	3	0	9	68	69
WL	63	62	2	0	0	62	3	0	0	65	66
WT	477	472	8	0	0	472	12	0	0	484	494
WR	161	160	0	2	0	160	0	4	0	164	167
TOTAL	**3122**	**3082**	**52**	**6**	**15**	**3082**	**78**	**12**	**45**	**3217**	**3281**

NOTE: Percent increase to obtain Ambient Future Volume: 1.02

PCE CONVERSION TABLE

Intersection: Vincent Avenue & Arrow Highway

AM PEAK HOUR

						ADJUSTED FOR PCE FACTOR					
Movement	**Total Volume**	**Passenger Volume**	**2-Axle Buses/Trucks**	**3-Axle Trucks**	**4+-Axle Trucks**	**Passenger Volume (1.0 PCE)**	**2-Axle Buses/Trucks (1.5 PCE)**	**3-Axle Trucks (2.0 PCE)**	**4+-Axle Trucks (3.0 PCE)**	**Total PCE Volume**	**Ambient Future Volume**
NL	163	149	7	4	24	149	11	8	72	240	244
NT	255	241	5	2	30	241	8	4	90	343	349
NR	48	46	2	2	0	46	3	4	0	53	54
SL	19	13	7	2	3	13	11	4	9	37	37
ST	172	149	17	4	30	149	26	8	90	273	278
SR	73	52	19	10	9	52	29	20	27	128	130
EL	54	47	9	0	3	47	14	0	9	70	71
ET	338	298	48	8	12	298	72	16	36	422	430
ER	62	43	7	0	45	43	11	0	135	189	192
WL	104	103	0	2	0	103	0	4	0	107	109
WT	1144	1107	38	6	27	1107	57	12	81	1257	1282
WR	76	73	4	0	3	73	6	0	9	88	90
TOTAL	**2508**	**2321**	**163**	**40**	**186**	**2321**	**245**	**80**	**558**	**3204**	**3268**

NOTE: Percent increase to obtain Ambient Future Volume: 1.02

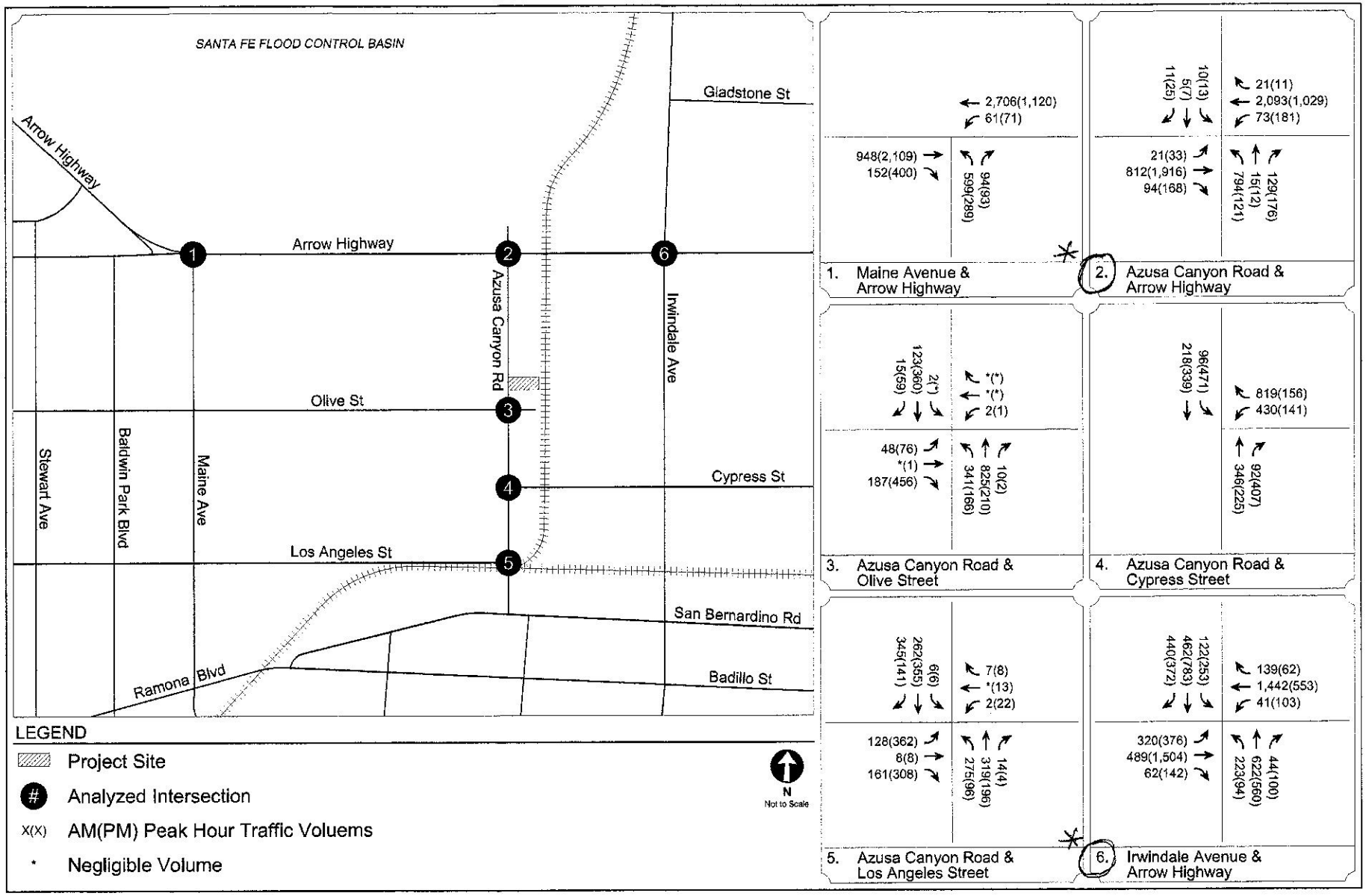
PCE CONVERSION TABLE

Intersection: Vincent Avenue & Arrow Highway

PM PEAK HOUR

						ADJUSTED FOR PCE FACTOR					
Movement	**Total Volume**	**Passenger Volume**	**2-Axle Buses/Trucks**	**3-Axle Trucks**	**4+-Axle Trucks**	**Passenger Volume (1.0 PCE)**	**2-Axle Buses/Trucks (1.5 PCE)**	**3-Axle Trucks (2.0 PCE)**	**4+-Axle Trucks (3.0 PCE)**	**Total PCE Volume**	**Ambient Future Volume**
NL	53	49	2	2	6	49	3	4	18	74	75
NT	283	262	3	36	3	262	5	72	9	348	354
NR	135	134	0	2	0	134	0	4	0	138	141
SL	32	29	4	2	0	29	6	4	0	39	40
ST	234	225	11	0	3	225	17	0	9	251	256
SR	88	78	6	12	3	78	9	24	9	120	122
EL	190	169	6	32	3	169	9	64	9	251	256
ET	1337	1326	10	2	12	1326	15	4	36	1381	1409
ER	218	215	0	6	0	215	0	12	0	227	232
WL	103	103	0	0	0	103	0	0	0	103	105
WT	468	458	12	2	3	458	18	4	9	489	499
WR	32	32	0	0	0	32	0	0	0	32	33
TOTAL	**3173**	**3080**	**54**	**96**	**33**	**3080**	**81**	**192**	**99**	**3452**	**3521**

NOTE: Percent increase to obtain Ambient Future Volume: 1.02



EXISTING CONDITIONS (YEAR 2013)
INTERSECTION PEAK HOUR TRAFFIC VOLUMES

FIGURE 5

SOURCE, FIGURE: GIBSON, AZUSA CANYON TS

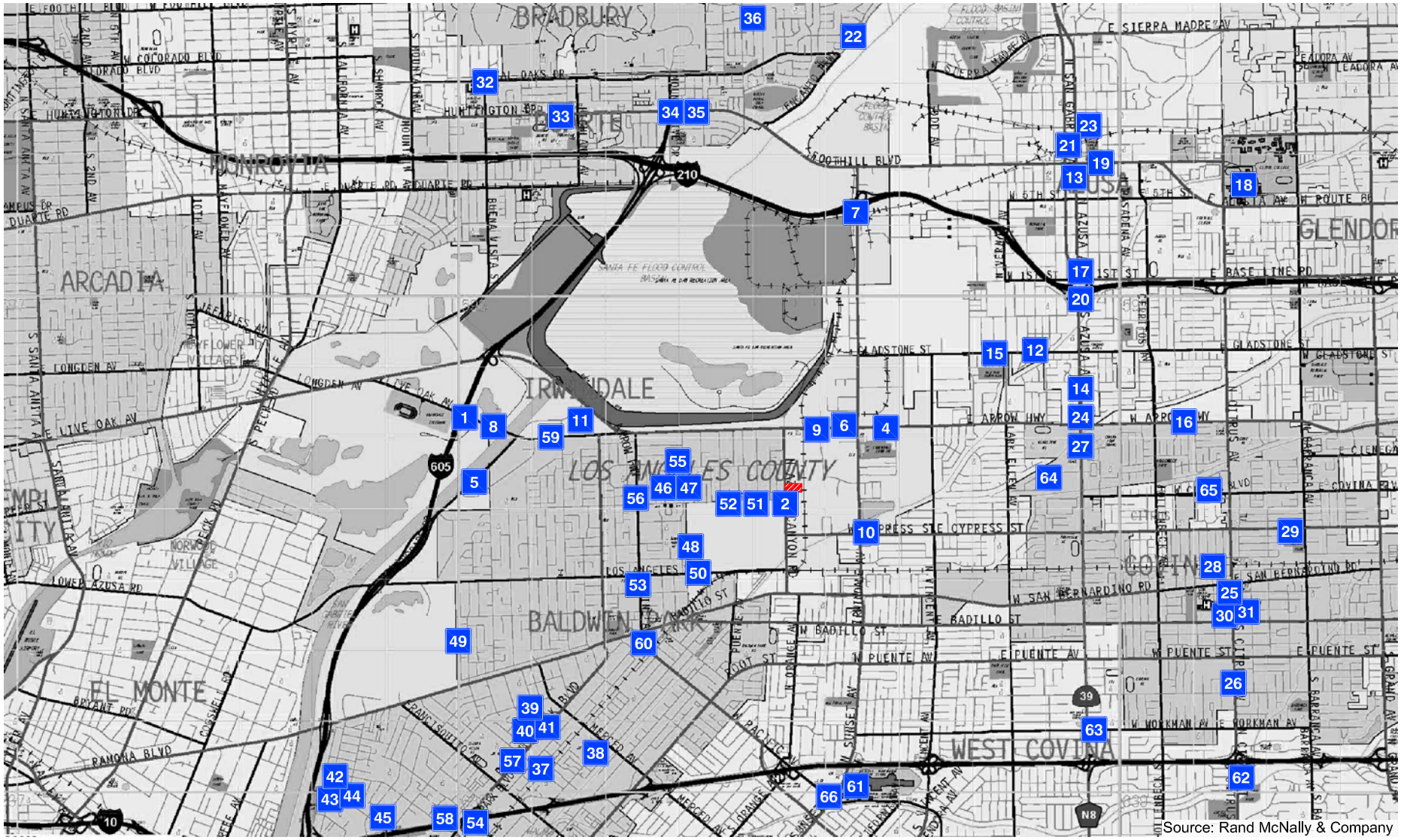
* REPRESENTS A "WORST CASE" WHEN COMPARED TO CURRENT COUNTS, SO REFERENCED & USED IN THE TIA ANALYSES.

TABLE 1
HCM LEVELS OF SERVICE DEFINITIONS

Level of Service (LOS)	Signalized Intersection	Stop-Controlled Intersection
	Average Delay per Vehicle (sec)	Average Delay per Vehicle (sec)
A	0 - 10	0 - 10
B	> 10 - 20	> 10 - 15
C	> 20 - 35	> 15 - 25
D	> 35 - 55	> 25 - 35
E	> 55 - 80	> 35 - 50
F	> 80	> 50

Source: *Highway Capacity Manual* (Transportation Research Board, 2010)

SOURCE, TABLE: GIBSON, AZUSA CANYON TS



LEGEND

Project Site

X Related Project

N
Not to Scale

LOCATION OF RELATED PROJECTS

FIGURE 6

TABLE 4

TRIP GENERATION ESTIMATES FOR RELATED PROJECTS

CITY OF IRWINDALE

Map ID	Project Name/Location	Description/Land Use	Size	Units [c]	Source	Net Daily Trips	Net A.M. Peak Hour Trips			Net P.M. Peak Hour Trips		
							In	Out	Total	In	Out	Total
1.	Kara Youth League/Santa Fe Dam Sports Park NE Corner of Arrow Highway & I-605	Youth sports park	17 Acres		City of Irwindale/Previous Traffic Study	710	15	13	28	40	40	80
2	Hoy Fong Foods 4800 Azusa Canyon Road	Warehouse Food Manufacturing Administrative Office	454,000 SF 150,000 SF 22,164 SF		City of Irwindale/Previous Traffic Study	775	154	90	244	105	127	232
3.	City Infill Housing Project Various Locations	Single Family Units	7 DU		City of Irwindale	-	-	-	-	-	-	-
4.	City Senior Housing Project 16140 Arrow Highway	Senior Housing	9 DU		City of Irwindale	33	2	4	7	1	0	2
5.	5200 Rivergrade Road Restaurant, Convenience Store, and Gas Station 5200 Rivergrade Road	Service Station with Convenience Store Fast Food Restaurant with Drive-Thru 15% Pass-by Credit Subtotal	16 Fueling Pumps 2,800 SF - -		City of Irwindale/Previous Traffic Study	2,751 1,389 (621) 3,519	109 70 (27) 152	105 68 (26) 147	214 138 (53) 299	128 40 (27) 150	123 45 (26) 143	251 94 (52) 293
6	Drive-through Car Wash 15875 Arrow Highway	Car wash structure added to existing gas station with convenience store	12 Fueling Pumps		City of Irwindale	1,634	73	70	143	85	82	167
7	Parking Structure 5000 Irwindale Avenue	Four level 480 space (249 net new spaces) parking garage to serve the Gateway Business Center	249 Parking Spaces		City of Irwindale	-	-	-	-	-	-	-
8.	Ahern Rentals 13845 Live Oak Lane	Replace 23,000 square foot building with 29,000 square foot building	6,000 SF		Previous study/ Waste Management MRF EIR	42	5	1	6	1	5	6
9.	Hotel 15744 Arrow Highway	New hotel	120 Rooms		Previous study/ Waste Management MRF EIR	960	41	26	67	37	34	71
10.	Mod 4-06 to CUP 67-6 16025 Cypress Street	Our Lady of Guadalupe Church Expansion	12,227 SF		Downtown Baldwin Park Area Redevelopment Project Traffic Study	111	4	3	7	3	4	7

CITY OF AZUSA

Map ID	Project Name/Location	Description/Land Use	Size	Units [c]	Source	Net Daily Trips	Net A.M. Peak Hour Trips			Net P.M. Peak Hour Trips		
							In	Out	Total	In	Out	Total
11.	Waste Management Materials Recycling Facility and Transfer Station 501 West Gladstone	125,000 sf processing building with offices to receive, process and transfer up to 3,800 tons per day of solid waste	3,800 Tons/Day		City of Irwindale/Waste Management MRF EIR	4,294	224	148	372	400	320	720
12	Downtown Azusa Project 1 618/621 North Azusa Avenue	Restaurant Office	3,900 SF 1,035 SF		City of Azusa	406 11	23 1	22 0	45 2	26 0	16 1	43 2
13.	Residential Project 710 South Azusa Avenue	Residential Condominiums	81 DU		City of Azusa	471	6	30	36	28	14	42
14	Gladstone Mixed Use 890 Gladstone Street	Residential Apartments Retail/Commercial	9 DU 4,443 SF		City of Azusa	60 191	1 3	4 2	5 4	4 10	2 6	6 17
15.	Residential Project 523-531 Arrow Highway	Residential Condominiums	28 DU		City of Azusa	163	2	10	12	10	5	15
16.	Monrovia Nursery Specific Plan	Single Family Residential Residential Condominiums Elementary School Middle School Park Transit Commercial	752 DU 823 DU 245 Students 175 Students 6 Acres 50,000 SF		City of Azusa	7,197 4,782 316 284 9 2,147	141 62 61 52 – 33	423 301 50 43 – 20	564 362 110 95 – 50	476 287 18 14 – 114	281 141 19 14 – 73	760 428 37 28 – 187
17	Azusa Pacific University Specific Plan Azusa Pacific University - East & West Campuses	East Campus West Campus	974 Students 2,658 Students		City of Azusa	2,080 6,069	147 428	37 107	184 536	55 161	128 375	184 536
18.	Mixed Use Project NE Corner of Dalton Avenue & Foothill Boulevard	Residential Retail	73 DU 8,000 SF		City of Azusa	485 344	7 5	30 3	37 8	29 18	16 12	45 30
19.	Block 36 SE Corner of Azusa Avenue & Foothill Boulevard	Residential Apartments Office Retail/Commercial Restaurant	110 DU 29,200 SF 30,000 SF 7,500 SF		City of Azusa	732 321 1,288 954	11 40 18 45	45 5 12 41	56 45 30 86	44 7 68 49	24 38 44 34	68 44 112 84
20.	Target Project 809 N Azusa Avenue	Retail	150,000 SF		City of Azusa	5,441	92	99	190	341	218	560
21.	Azusa Rock Revised Conditional Use Permit and Reclamation Plan [a] Northerly terminus of Encanto Parkway & Fish Canyon Road	Mineral Resource - Mining	Revised Conditional Use Permit and Reclamation Plan; Modify operations and reclamation approach		City of Azusa	–	56	56	112	19	19	37
22.	Residential Project 9th Street & Alameda Avenue	Residential Townhomes	14 DU		City of Azusa	81	1	5	6	5	2	7
23.	Commercial Retail Project 850 S Azusa Avenue	Commercial	47,000 SF		City of Azusa	2,018	29	18	47	107	68	175

SOURCE: GIBSON, AZUSA CANYON TS

TABLE 4 (continued)

TRIP GENERATION ESTIMATES FOR RELATED PROJECTS

CITY OF BALDWIN PARK

Map ID	Project Name/Location	Description/Land Use	Size	Units [c]	Source	Net Daily Trips	Net A.M. Peak Hour Trips			Net P.M. Peak Hour Trips		
							In	Out	Total	In	Out	Total
36.	Residential 13655 Foster Avenue	Medium-Density Residential	10	DU	City of Baldwin Park	67	1	4	5	4	2	6
37.	Residential 3346 Vineland Avenue	Medium-Density Residential	15	DU	City of Baldwin Park	100	2	6	8	6	3	9
38.	Residential 13732 Monterey Avenue	Single Family Residential	1	DU	City of Baldwin Park	10	0	1	1	1	0	1
39.	Residential 13734 Monterey Avenue	Single Family Residential	1	DU	City of Baldwin Park	10	0	1	1	1	0	1
40.	Residential 13736 Monterey Avenue	Single Family Residential	1	DU	City of Baldwin Park	10	0	1	1	1	0	1
41.	Residential 12723 Bess Avenue	Single Family Residential	1	DU	City of Baldwin Park	10	0	1	1	1	0	1
42.	Residential 12725 Bess Avenue	Single Family Residential	1	DU	City of Baldwin Park	10	0	1	1	1	0	1
43.	Residential 12727 Bess Avenue	Single Family Residential	1	DU	City of Baldwin Park	10	0	1	1	1	0	1
44.	Residential 3138 Magum Street	Single Family Residential	1	DU	City of Baldwin Park	10	0	1	1	1	0	1
45.	Residential 4859 Marion Avenue	Single Family Residential	1	DU	City of Baldwin Park	10	0	1	1	1	0	1
46.	Residential 4861 Marion Avenue	Single Family Residential	1	DU	City of Baldwin Park	10	0	1	1	1	0	1
47.	Residential 4503 Park Avenue	Single Family Residential	1	DU	City of Baldwin Park	10	0	1	1	1	0	1
48.	Residential 4143 Hornbrook Avenue	Single Family Residential	1	DU	City of Baldwin Park	10	0	1	1	1	0	1
49.	Residential 4455 Park Avenue	Single Family Residential	1	DU	City of Baldwin Park	10	0	1	1	1	0	1
50.	Residential 4819 Lante Street	Single Family Residential	1	DU	City of Baldwin Park	10	0	1	1	1	0	1
51.	Residential 4820-28 Fortin Avenue	Single Family Residential	1	DU	City of Baldwin Park	10	0	1	1	1	0	1
52.	Commercial Development 4341 Maine Avenue	Commercial	4,500	SF	City of Baldwin Park	193	3	2	5	10	7	17
53.	Restaurant 14622 Dalewood Street	Restaurant	15,295	SF	City of Baldwin Park	1,945	92	85	176	101	70	171
54.	Warehouse 5029 Bleecker Street	Warehouse	6,748	SF	City of Baldwin Park	31	2	1	3	1	2	2
55.	Office 4814 Maine Avenue	Office	6,300	SF	City of Baldwin Park	69	9	1	10	0	2	2
56.	Office 3323 Baldwin Park Boulevard	Office	4,950	SF	City of Baldwin Park	54	7	1	8	1	6	7
57.	Office and Warehouse 13329 Garvey Avenue	Office / Warehouse	13,620	SF	City of Baldwin Park	150	19	3	21	3	17	20
58.	Fueling Facility for Truck Fleet [b] 13940 Live Oak Avenue	Fueling Station	--		City of Baldwin Park	–	–	–	–	–	–	–
59.	Institutional Facility with Parking Structure 14403 Pacific Avenue	Institution	175,200	SF	City of Baldwin Park	12,145	870	166	1,036	66	147	213

TABLE 4 (continued)

TRIP GENERATION ESTIMATES FOR RELATED PROJECTS

CITY OF WEST COVINA

Map ID	Project Name/Location	Description/Land Use	Size	Units [c]	Source	Net Daily Trips	Net A.M. Peak Hour Trips			Net P.M. Peak Hour Trips		
							In	Out	Total	In	Out	Total
60.	Westfield Expansion 112 Plaza Drive	Shopping Center	32,000	SF	City of West Covina	1,418	20	12	32	73	47	119
61	McIntyre Square Expansion 2812-1698 E Garvey Avenue	Restaurant	4,800	SF	City of West Covina	610	29	27	55	32	22	54
		Retail	4,800	SF		206	3	2	5	11	7	18
62.	West Covina Senior Villas 1838 E Workman Avenue	High-Density Residential	65	DU	City of West Covina	432	7	27	33	22	12	34
63	Mixed-Use Project 1045-1052 West Grondahl Street	Residential	412	DU	City of West Covina	2,740	42	168	210	166	89	255
		Commercial	20,000	SF		859	12	8	20	46	29	75
64.	Medical Imaging Center 1700 West Covina Parkway	Medical Office	9,300	SF	City of West Covina	102	13	2	14	2	12	14
65	Medical / Professional Office SE Corner of West Covina Parkway & W Garvey South	Office	55,000	SF	City of West Covina	608	75	10	85	14	68	82

CITY OF GLENDORA

Map ID	Project Name/Location	Description/Land Use	Size	Units [c]	Source	Net Daily Trips	Net A.M. Peak Hour Trips			Net P.M. Peak Hour Trips		
							In	Out	Total	In	Out	Total
66	Diamond Ridge	Quality Restaurant	6,500	SF	City of Glendora	585	N/A	N/A	5	33	16	49
		Office	30,000	SF		330	41	6	47	8	37	45
67.	Cataract	Condominiums	17	DU	City of Glendora	99	1	6	7	6	3	9
68.	JPI Sevilla Project	Condominiums	161	DU	City of Glendora	935	12	59	71	56	28	84
		Office	12,000	SF		132	16	2	19	3	15	18
69.	Glendora Station	Residential	87	DU	City of Glendora	579	9	35	44	35	19	54
		Office	5,000	SF		55	7	1	8	1	6	7
70.	Tract 46680	Single Family Residential	14	DU	City of Glendora	134	3	8	11	9	5	14
71.	Tract 46916	Single Family Residential	16	DU	City of Glendora	153	3	9	12	10	6	16
72.	Tract 45858	Single Family Residential	13	DU	City of Glendora	124	2	7	10	8	5	13
73.	Glendora Marketplace	Retail	50,000	SF	City of Glendora	2,147	31	20	50	114	73	187
		Quality Restaurant	4,200	SF		378	N/A	N/A	3	21	10	31
74.	Wildwood Canyon	Single Family Residential	54	DU	City of Glendora	517	10	30	41	34	20	55
75	Monrovia Nursery	Single Family Residential	54	DU	City of Glendora	517	10	30	41	34	20	55
76.	Grand-Foothill	Townhouses	18	DU	City of Glendora	105	6	30	36	29	14	43
		Condominiums	64	DU		372	2	12	14	12	6	17
77.	Grand Avenue Retail Center	General Commercial	14,000	SF	City of Glendora	601	9	5	14	32	20	52
		Quality Restaurant	4,200	SF		378	N/A	N/A	3	21	10	31
78	Walldorf Expansion	Retail/Grocery	20,000	SF	City of Glendora	1,146	14	7	21	50	50	100
79.	Route 66 Specific Plan	Office	750,000	SF	City of Glendora	8,258	1,023	140	1,163	190	928	1,118
		Commercial	750,000	SF		32,205	456	293	750	1,706	1,091	2,798
		Apartments	225	DU		1,496	23	92	115	91	49	140
TOTAL - ALL RELATED PROJECTS						134,287	6,226	3,556	9,782	8,284	6,750	12,035

Sources:
Trip Generation, 9th Edition, Institute of Transportation Engineers (ITE), 2012.

Notes:
[a] Materials processed through conveyor belts, trucks pick up material at Foothill & Irwindale, study intersections not impacted
[b] Assumed conversion of existing truck fleet fueling station; no net additional trips
[c] DU: Dwelling Unit; SF: Square Feet

TABLE 4 (continued)

TRIP GENERATION ESTIMATES FOR RELATED PROJECTS

CITY OF COVINA												
Map ID	Project Name/Location	Description/Land Use	Size	Units [c]	Source	Net Daily Trips	Net A.M. Peak Hour Trips			Net P.M. Peak Hour Trips		
							In	Out	Total	In	Out	Total
24.	Taco Bell 301 N Citrus Avenue	Fast-Food Restaurant with Drive-Thru	3,445 SF		City of Covina	1,709	87	83	170	60	55	115
25.	Commercial Center	Fast-Food Restaurant with Drive-Thru	1,188 SF			589	30	29	59	21	19	40
	Jack in the Box and CVS Pharmacy 545 S Citrus Avenue	Pharmacy / Drug Store	10,658 SF		City of Covina	960	20	14	34	45	45	90
26.	Lowes Home Improvements 1348 N Azusa Avenue	Home Improvement Store	111,348 SF		City of Covina	3,318	80	60	140	127	137	264
27.	Condominiums 515 N 3rd Street	Condominiums	30 DU		City of Covina	174	2	11	13	10	5	16
28.	Single Family Home 436 E Cypress Street	Single Family Residential	1 DU		City of Covina	19	0	1	1	1	0	1
29.	Condominiums Citrus Avenue & Italia Street	Condominiums	37 DU		City of Covina	215	3	14	16	13	6	19
30.	Mixed Use Condominiums	Retail	4,366 SF			187	3	2	4	10	6	16
	Citrus Avenue & Italia Street	Residential Condominiums	4 DU		City of Covina	23	0	1	2	1	1	2

CITY OF DUARTE												
Map ID	Project Name/Location	Description/Land Use	Size	Units [c]	Source	Net Daily Trips	Net A.M. Peak Hour Trips			Net P.M. Peak Hour Trips		
							In	Out	Total	In	Out	Total
31.	Rose Gardens at Santa Teresita 600 Buena Vista Street	Nursing Facility, Assisted Living	228,292 SF		City of Duarte	610	21	11	32	22	28	50
32.	Andres Duarte Terrace Phase II 1700 Huntington Drive	High-Density Residential	43 DU		City of Duarte	286	4	18	22	17	9	27
33.	Huntington Courts Phase III 2400 Huntington Drive	Medium-Density Residential	16 DU		City of Duarte	106	2	7	8	6	3	10
34.	Huntington Courts Phase II 2400 Huntington Drive	Residential (Single/Multi-Family)	14 DU		City of Duarte	93	1	6	7	6	3	9
35.	Attalla Ranch (Las Lomas Estates) NE Corner of Sunnydale & Woodbluff	Single Family Residential	15 DU		City of Duarte	144	3	8	11	10	6	15

Table A - Project Trip Generation

Land Use	Units	A.M. Peak Hour In	A.M. Peak Hour Out	A.M. Peak Hour Total	P.M. Peak Hour In	P.M. Peak Hour Out	P.M. Peak Hour Total	Saturday Peak Hour In	Saturday Peak Hour Out	Saturday Peak Hour Total	Daily
Factory Outlet Center[2]	700 TSF[1]										
Trips/Unit		*0.49*	*0.18*	*0.67*	*1.08*	*1.21*	*2.29*	*1.93*	*1.86*	*3.79*	*26.59*
Gross Trip Generation		342	127	469	753	850	1,603	1,353	1,300	2,653	18,613
Pass-By Trips[3]	(34% P.M., 26% Saturday)	0	0	0	(273)	(273)	(545)	(345)	(345)	(690)	(545)
Diverted Linked Trips[4]	(26.4% P.M., 35.2% Saturday)	0	0	0	(140)	(140)	(280)	(345)	(345)	(691)	(280)
Total Net New Trips		**342**	**127**	**469**	**341**	**438**	**778**	**663**	**610**	**1,272**	**17,788**

Notes:

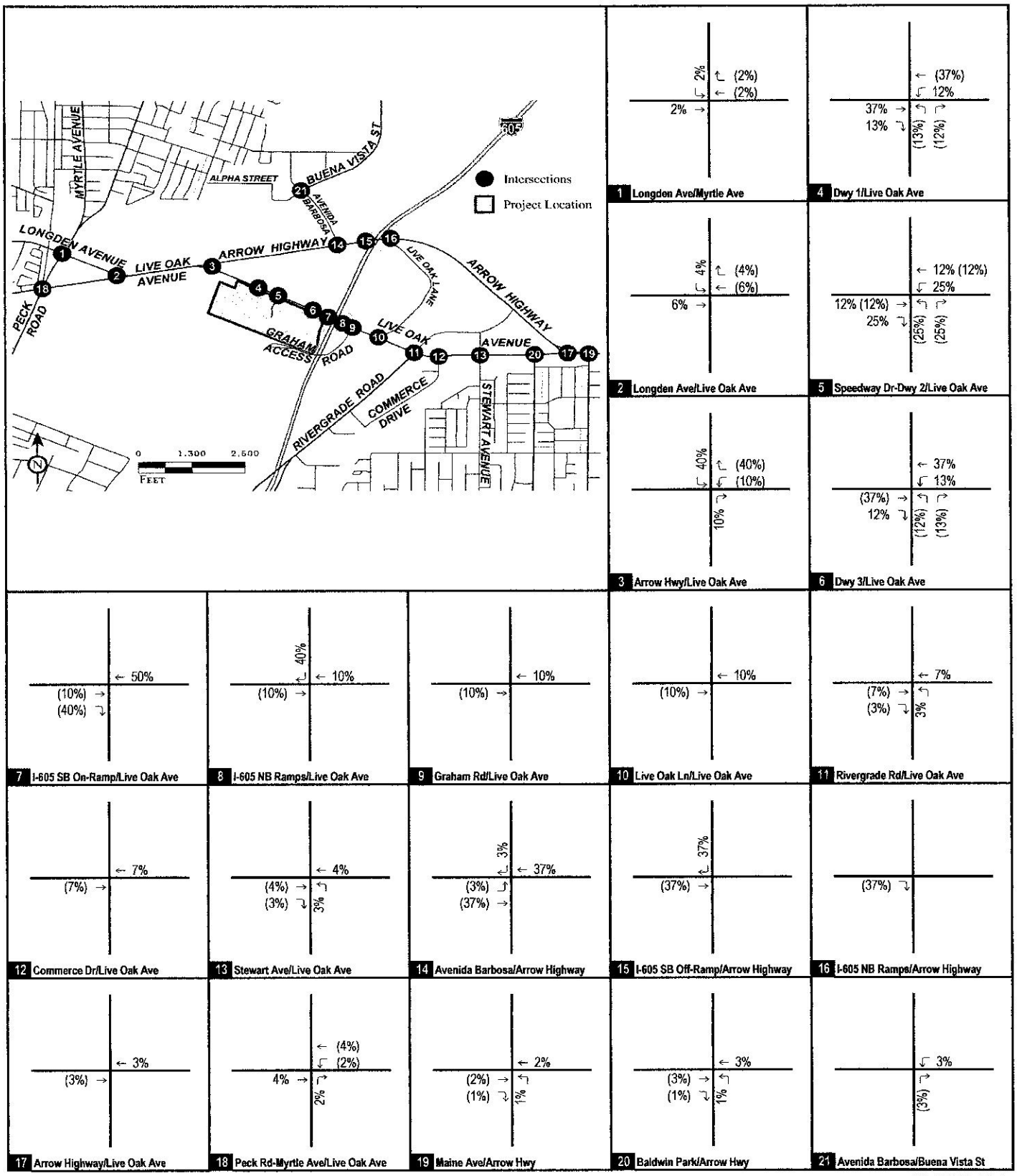
1 TSF = Thousand Square Feet

2 Trip generation based on rates for Land Use 823 - "Factory Outlet Center" from ITE*Trip Generation* (9th Edition).

3 Pass-by rates based on rates for Land Use 820 - "Shopping Center" from ITE Trip Generation Handbook (9th Edition). Since there is no data available on a.m. and daily pass-by trips, no reduction has been taken for the a.m. and the p.m. pass-by has been applied to the daily traffic.

4 Diverted Linked Trips are based on rates for Land Use 820 - "Shopping Center" from ITE Trip Generation Handbook (9th Edition). Since there is no data available for a.m. and daily diverted linked trips, no reduction has been taken for the a.m. and the p.m. diverted linked has been applied to the daily traffic.

SOURCE: LSA, FORMER RACETRACK SITE SCOPE, 7/9/14



LSA

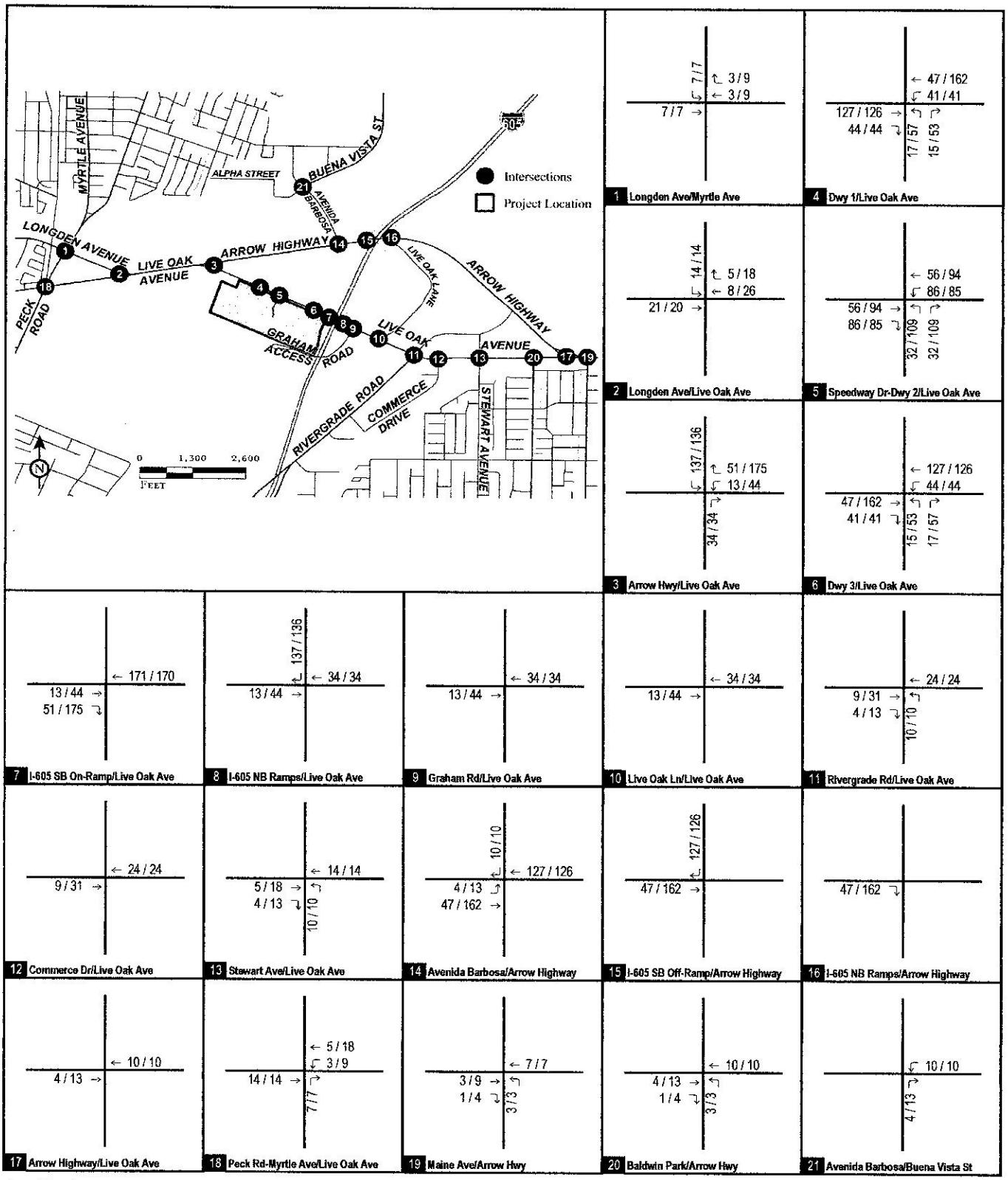
FIGURE 2

XX% (YY%) Inbound (Outbound) Trip Distribution

Irwindale Regional Shopping Center

Project Trip Distribution

R:\COI1401_Irwindale Outlet Center\Traffic\g30-dist_OY_Primary_Auto (7/9/2014)



LSA

FIGURE 3

XXX / YYY AM / PM Peak Hour Traffic Volumes

Irwindale Regional Shopping Center

Total Net Peak Hour Trips

SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway / Live Oak
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	AM Peak Hour	Analysis Year	EXISTING CONDITIONS

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2			2	1				2		1
Lane Group	L	T			T	R				L		R
Volume (vph)	91	985			1568	1371				395		54
% Heavy Vehicles	0	0			0	0				0		0
PHF	0.92	0.92			0.92	0.92				0.92		0.92
Pretimed/Actuated (P/A)	P	P			P	P				P		P
Startup Lost Time	2.0	2.0			2.0	2.0				2.0		2.0
Extension of Effective Green	2.0	2.0			2.0	2.0				2.0		2.0
Arrival Type	3	3			3	3				3		3
Unit Extension	3.0	3.0			3.0	3.0				3.0		3.0
Ped/Bike/RTOR Volume	0	0		0	0	1371				0	0	0
Lane Width	12.0	12.0			12.0	12.0				12.0		12.0
Parking/Grade/Parking	N	0	N	N	0	N				N	0	N
Parking/Hour												
Bus Stops/Hour	0	0			0	0				0		0
Minimum Pedestrian Time		3.2			3.2						3.2	

Phasing	EB Only	Thru & RT	03	04	SB Only	06	07	08
Timing	G = 6.9	G = 48.6	G =	G =	G = 12.5	G =	G =	G =
	Y = 4	Y = 4	Y =	Y =	Y = 4	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 80.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	99	1071			1704	0				429		59
Lane Group Capacity	156	2691			2198	981				548		252
v/c Ratio	0.63	0.40			0.78	0.00				0.78		0.23
Green Ratio	0.09	0.74			0.61	0.61				0.16		0.16
Uniform Delay d_1	35.3	3.7			11.6	6.2				32.4		29.6
Delay Factor k	0.50	0.50			0.50	0.50				0.50		0.50
Incremental Delay d_2	18.1	0.4			2.8	0.0				10.7		2.2
PF Factor	1.000	1.000			1.000	1.000				1.000		1.000
Control Delay	53.4	4.2			14.4	6.2				43.1		31.7
Lane Group LOS	D	A			B	A				D		C
Approach Delay	8.3			14.4						41.7		
Approach LOS	A			B						D		
Intersection Delay	16.3			Intersection LOS						B		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway / Live Oak
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	PM Peak Hour	Analysis Year	EXISTING CONDITIONS

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2			2	1				2		1
Lane Group	L	T			T	R				L		R
Volume (vph)	44	1640			934	477				1073		122
% Heavy Vehicles	0	0			0	0				0		0
PHF	0.92	0.92			0.92	0.92				0.92		0.92
Pretimed/Actuated (P/A)	P	P			P	P				P		P
Startup Lost Time	2.0	2.0			2.0	2.0				2.0		2.0
Extension of Effective Green	2.0	2.0			2.0	2.0				2.0		2.0
Arrival Type	3	3			3	3				3		3
Unit Extension	3.0	3.0			3.0	3.0				3.0		3.0
Ped/Bike/RTOR Volume	0	0		0	0	477				0	0	0
Lane Width	12.0	12.0			12.0	12.0				12.0		12.0
Parking/Grade/Parking	N	0	N	N	0	N				N	0	N
Parking/Hour												
Bus Stops/Hour	0	0			0	0				0		0
Minimum Pedestrian Time		3.2			3.2						3.2	

Phasing	EB Only	Thru & RT	03	04	SB Only	06	07	08
Timing	G = 6.6	G = 26.7	G =	G =	G = 24.7	G =	G =	G =
	Y = 4	Y = 4	Y =	Y =	Y = 4	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 70.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	48	1783			1015	0				1166		133
Lane Group Capacity	170	1928			1380	616				1237		570
v/c Ratio	0.28	0.92			0.74	0.00				0.94		0.23
Green Ratio	0.09	0.53			0.38	0.38				0.35		0.35
Uniform Delay d_1	29.5	15.1			18.6	13.4				22.0		16.0
Delay Factor k	0.50	0.50			0.50	0.50				0.50		0.50
Incremental Delay d_2	4.1	9.1			3.5	0.0				15.1		1.0
PF Factor	1.000	1.000			1.000	1.000				1.000		1.000
Control Delay	33.6	24.1			22.1	13.4				37.0		16.9
Lane Group LOS	C	C			C	B				D		B
Approach Delay	24.4			22.1						35.0		
Approach LOS	C			C						C		
Intersection Delay	27.1			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway & Azusa Canyon
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	AM Peak Hour	Analysis Year	EXISTING CONDITIONS

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Lane Group	L	TR		L	TR		L	LT	R	L	TR	
Volume (vph)	21	812	94	73	2093	21	794	15	129	10	5	11
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	A	P	P	P
Startup Lost Time	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Arrival Type	3	3		3	3		3	3	3	3	3	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0		0	0	0	0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	NB Only	SB Only	07	08
Timing	G = 4.0	G = 69.1	G =	G =	G = 26.7	G = 4.2	G =	G =
	Y = 4	Y = 4	Y =	Y =	Y = 4	Y = 4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 120.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	23	985		79	2298		863	16	140	11	17	
Lane Group Capacity	60	2051		60	2080		402	423	359	63	59	
v/c Ratio	0.38	0.48		1.32	1.10		2.15	0.04	0.39	0.17	0.29	
Green Ratio	0.03	0.58		0.03	0.58		0.22	0.22	0.22	0.04	0.04	
Uniform Delay d_1	56.8	14.9		58.0	25.5		46.6	36.6	39.7	56.2	56.4	
Delay Factor k	0.50	0.50		0.50	0.50		0.50	0.50	0.11	0.50	0.50	
Incremental Delay d_2	17.5	0.8		222.4	55.0		524.3	0.2	0.7	5.9	11.9	
PF Factor	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	
Control Delay	74.3	15.7		280.4	80.4		570.9	36.7	40.4	62.2	68.3	
Lane Group LOS	E	B		F	F		F	D	D	E	E	
Approach Delay	17.1			87.1			489.7			65.9		
Approach LOS	B			F			F			E		
Intersection Delay	163.6			Intersection LOS						F		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway & Azusa Canyon
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	PM Peak Hour	Analysis Year	EXISTING CONDITIONS

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Lane Group	L	TR		L	TR		L	LT	R	L	TR	
Volume (vph)	33	1916	168	181	1029	11	121	12	176	13	7	25
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	A	P	P	P
Startup Lost Time	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Arrival Type	3	3		3	3		3	3	3	3	3	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0		0	0	0	0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	NB Only	SB Only	07	08
Timing	G = 13.0	G = 71.0	G =	G =	G = 15.0	G = 5.0	G =	G =
	Y = 4	Y = 4	Y =	Y =	Y = 4	Y = 4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 120.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	36	2266		197	1130		132	13	191	14	35	
Lane Group Capacity	196	2115		196	2137		226	238	202	75	70	
v/c Ratio	0.18	1.07		1.01	0.53		0.58	0.05	0.95	0.19	0.50	
Green Ratio	0.11	0.59		0.11	0.59		0.13	0.13	0.13	0.04	0.04	
Uniform Delay d_1	48.7	24.5		53.5	14.6		49.6	46.3	52.1	55.5	56.3	
Delay Factor k	0.50	0.50		0.50	0.50		0.50	0.50	0.46	0.50	0.50	
Incremental Delay d_2	2.1	41.9		65.6	0.9		10.6	0.4	47.9	5.4	23.3	
PF Factor	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	
Control Delay	50.7	66.4		119.1	15.5		60.1	46.7	100.0	61.0	79.6	
Lane Group LOS	D	E		F	B		E	D	F	E	E	
Approach Delay	66.2			30.9			82.3			74.3		
Approach LOS	E			C			F			E		
Intersection Delay	56.0			Intersection LOS						E		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway & Irwindale Ave.
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	AM Peak Hour	Analysis Year	EXISTING CONDITIONS

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	3	0	1	2	0	1	2	0	1	2	1
Lane Group	L	TR		L	TR		L	TR		L	T	R
Volume (vph)	320	489	62	41	1442	139	223	622	44	122	462	440
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Extension of Effective Green	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Arrival Type	3	3		3	3		3	3		3	3	3
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	45
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0		0	0		0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 11.6	G = 56.5	G =	G =	G = 12.0	G = 23.9	G =	G =
	Y = 4	Y = 4	Y =	Y =	Y = 4	Y = 4	Y =	Y =
Duration of Analysis (hrs) = 0.25					Cycle Length C = 120.0			

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	348	599		45	1718		242	724		133	502	429
Lane Group Capacity	339	2396		174	1681		181	713		181	721	594
v/c Ratio	1.03	0.25		0.26	1.02		1.34	1.02		0.73	0.70	0.72
Green Ratio	0.10	0.47		0.10	0.47		0.10	0.20		0.10	0.20	0.33
Uniform Delay d_1	54.2	19.0		50.2	31.8		54.0	48.0		52.5	44.7	35.4
Delay Factor k	0.50	0.50		0.50	0.50		0.50	0.50		0.50	0.50	0.50
Incremental Delay d_2	55.9	0.3		3.6	27.7		184.1	37.6		23.1	5.5	7.4
PF Factor	1.000	1.000		1.000	1.000		1.000	1.000		1.000	1.000	1.000
Control Delay	110.1	19.3		53.8	59.4		238.1	85.7		75.5	50.2	42.9
Lane Group LOS	F	B		D	E		F	F		E	D	D
Approach Delay	52.6			59.3			123.9			50.4		
Approach LOS	D			E			F			D		
Intersection Delay	69.1			Intersection LOS						E		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway & Irwindale Ave.
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	PM Peak Hour	Analysis Year	EXISTING CONDITIONS

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	3	0	1	2	0	1	2	0	1	2	1
Lane Group	L	TR		L	TR		L	TR		L	T	R
Volume (vph)	376	1504	142	103	553	62	94	560	100	253	783	372
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Extension of Effective Green	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Arrival Type	3	3		3	3		3	3		3	3	3
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	37
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0		0	0		0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	EB Only	Thru & RT	04	Excl. Left	SB Only	Thru & RT	08
Timing	G = 7.3	G = 10.4	G = 23.0	G =	G = 8.2	G = 6.2	G = 20.9	G =
	Y = 4	Y = 4	Y = 4	Y =	Y = 4	Y = 4	Y = 4	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 100.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	409	1789		112	668		102	718		275	851	364
Lane Group Capacity	761	1911		132	819		148	739		332	1125	685
v/c Ratio	0.54	0.94		0.85	0.82		0.69	0.97		0.83	0.76	0.53
Green Ratio	0.22	0.37		0.07	0.23		0.08	0.21		0.18	0.31	0.42
Uniform Delay d_1	34.7	30.2		45.8	36.5		44.7	39.3		39.3	31.0	21.4
Delay Factor k	0.50	0.50		0.50	0.50		0.50	0.50		0.50	0.50	0.50
Incremental Delay d_2	2.7	10.2		45.7	8.8		23.1	26.9		20.6	4.8	2.9
PF Factor	1.000	1.000		1.000	1.000		1.000	1.000		1.000	1.000	1.000
Control Delay	37.4	40.3		91.5	45.3		67.8	66.1		59.9	35.8	24.4
Lane Group LOS	D	D		F	D		E	E		E	D	C
Approach Delay	39.8			51.9			66.3			37.5		
Approach LOS	D			D			E			D		
Intersection Delay	45.0			Intersection LOS						D		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Irwindale & Cypress
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	AM Peak Hour	Analysis Year	EXISTING CONDITIONS

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Lane Group	L	TR		L	TR		L	TR		L	TR	
Volume (vph)	35	406	49	121	796	51	48	160	52	114	552	146
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Arrival Type	3	3		3	3		3	3		3	3	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0		0	0		0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	EW Perm	02	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 20.9	G =	G =	G =	G = 8.0	G = 19.1	G =	G =
	Y = 4	Y =	Y =	Y =	Y = 4	Y = 4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 60.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	38	494		132	920		52	231		124	759	
Lane Group Capacity	127	1240		274	1249		241	1109		241	1115	
v/c Ratio	0.30	0.40		0.48	0.74		0.22	0.21		0.51	0.68	
Green Ratio	0.35	0.35		0.35	0.35		0.13	0.32		0.13	0.32	
Uniform Delay d_1	14.2	14.8		15.3	17.1		23.2	14.9		24.2	17.8	
Delay Factor k	0.50	0.50		0.50	0.50		0.50	0.50		0.50	0.50	
Incremental Delay d_2	5.9	1.0		6.0	3.9		2.0	0.4		7.6	3.4	
PF Factor	1.000	1.000		1.000	1.000		1.000	1.000		1.000	1.000	
Control Delay	20.2	15.8		21.3	21.0		25.2	15.4		31.8	21.2	
Lane Group LOS	C	B		C	C		C	B		C	C	
Approach Delay	16.1			21.1			17.2			22.7		
Approach LOS	B			C			B			C		
Intersection Delay	20.2			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Irwindale & Cypress
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	PM Peak Hour	Analysis Year	EXISTING CONDITIONS

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Lane Group	L	TR		L	TR		L	TR		L	TR	
Volume (vph)	199	1002	68	65	484	164	112	728	101	57	186	53
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Arrival Type	3	3		3	3		3	3		3	3	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0		0	0		0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	EW Perm	02	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 26.0	G =	G =	G =	G = 8.5	G = 23.5	G =	G =
	Y = 4	Y =	Y =	Y =	Y = 4	Y = 4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 70.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	216	1163		71	704		122	901		62	260	
Lane Group Capacity	194	1331		108	1293		219	1192		219	1174	
v/c Ratio	1.11	0.87		0.66	0.54		0.56	0.76		0.28	0.22	
Green Ratio	0.37	0.37		0.37	0.37		0.12	0.34		0.12	0.34	
Uniform Delay d_1	22.0	20.5		18.3	17.3		29.0	20.7		28.0	16.7	
Delay Factor k	0.50	0.50		0.50	0.50		0.50	0.50		0.50	0.50	
Incremental Delay d_2	98.3	8.2		27.2	1.7		9.9	4.5		3.2	0.4	
PF Factor	1.000	1.000		1.000	1.000		1.000	1.000		1.000	1.000	
Control Delay	120.3	28.7		45.5	19.0		38.8	25.2		31.2	17.1	
Lane Group LOS	F	C		D	B		D	C		C	B	
Approach Delay	43.0			21.4			26.8			19.8		
Approach LOS	D			C			C			B		
Intersection Delay	31.4			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway & Vincent
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	AM Peak Hour	Analysis Year	EXISTING CONDITIONS

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Lane Group	L	T	R	L	TR		L	TR		L	TR	
Volume (vph)	70	422	189	107	1257	88	240	343	53	37	273	128
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Arrival Type	3	3	3	3	3		3	3		3	3	
Unit Extension	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0		12.0	12.0		12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0		0	0		0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 36.3	G =	G =	G =	G = 25.7	G =	G =	G =
	Y = 4	Y =	Y =	Y =	Y = 4	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 70.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	76	459	205	116	1462		261	431		40	436	
Lane Group Capacity	108	1876	837	465	1858		315	1302		318	1265	
v/c Ratio	0.70	0.24	0.24	0.25	0.79		0.83	0.33		0.13	0.34	
Green Ratio	0.52	0.52	0.52	0.52	0.52		0.37	0.37		0.37	0.37	
Uniform Delay d_1	12.8	9.3	9.3	9.3	13.7		20.1	16.0		14.7	16.0	
Delay Factor k	0.50	0.50	0.50	0.50	0.50		0.50	0.50		0.50	0.50	
Incremental Delay d_2	31.9	0.3	0.7	1.3	3.5		21.6	0.7		0.8	0.7	
PF Factor	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
Control Delay	44.7	9.6	10.0	10.6	17.2		41.7	16.6		15.5	16.8	
Lane Group LOS	D	A	A	B	B		D	B		B	B	
Approach Delay	13.3			16.7			26.1			16.7		
Approach LOS	B			B			C			B		
Intersection Delay	17.8			Intersection LOS						B		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway & Vincent
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	PM Peak Hour	Analysis Year	EXISTING CONDITIONS

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Lane Group	L	T	R	L	TR		L	TR		L	TR	
Volume (vph)	251	1381	227	103	489	32	74	348	138	39	251	120
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Arrival Type	3	3	3	3	3		3	3		3	3	
Unit Extension	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0		12.0	12.0		12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0		0	0		0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 39.0	G =	G =	G =	G = 13.0	G =	G =	G =
	Y = 4	Y =	Y =	Y =	Y = 4	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25					Cycle Length C = 60.0			

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	273	1501	247	112	567		80	528		42	403	
Lane Group Capacity	541	2352	1050	146	2330		175	750		127	746	
v/c Ratio	0.50	0.64	0.24	0.77	0.24		0.46	0.70		0.33	0.54	
Green Ratio	0.65	0.65	0.65	0.65	0.65		0.22	0.22		0.22	0.22	
Uniform Delay d_1	5.5	6.3	4.3	7.3	4.4		20.4	21.7		19.8	20.8	
Delay Factor k	0.50	0.50	0.50	0.50	0.50		0.50	0.50		0.50	0.50	
Incremental Delay d_2	3.3	1.3	0.5	31.3	0.2		8.4	5.5		6.8	2.8	
PF Factor	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
Control Delay	8.8	7.6	4.9	38.6	4.6		28.8	27.2		26.7	23.6	
Lane Group LOS	A	A	A	D	A		C	C		C	C	
Approach Delay	7.4			10.2			27.4			23.9		
Approach LOS	A			B			C			C		
Intersection Delay	13.1			Intersection LOS						B		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway / Live Oak
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	AM Peak Hour	Analysis Year	Existing + Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2			2	1				2		1
Lane Group	L	T			T	R				L		R
Volume (vph)	91	1003			1572	1374				407		54
% Heavy Vehicles	0	0			0	0				0		0
PHF	0.92	0.92			0.92	0.92				0.92		0.92
Pretimed/Actuated (P/A)	P	P			P	P				P		P
Startup Lost Time	2.0	2.0			2.0	2.0				2.0		2.0
Extension of Effective Green	2.0	2.0			2.0	2.0				2.0		2.0
Arrival Type	3	3			3	3				3		3
Unit Extension	3.0	3.0			3.0	3.0				3.0		3.0
Ped/Bike/RTOR Volume	0	0		0	0	1371				0	0	0
Lane Width	12.0	12.0			12.0	12.0				12.0		12.0
Parking/Grade/Parking	N	0	N	N	0	N				N	0	N
Parking/Hour												
Bus Stops/Hour	0	0			0	0				0		0
Minimum Pedestrian Time		3.2			3.2						3.2	

Phasing	EB Only	Thru & RT	03	04	SB Only	06	07	08
Timing	G = 6.9	G = 48.6	G =	G =	G = 12.5	G =	G =	G =
	Y = 4	Y = 4	Y =	Y =	Y = 4	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 80.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	99	1090			1709	3				442		59
Lane Group Capacity	156	2691			2198	981				548		252
v/c Ratio	0.63	0.41			0.78	0.00				0.81		0.23
Green Ratio	0.09	0.74			0.61	0.61				0.16		0.16
Uniform Delay d_1	35.3	3.8			11.7	6.2				32.6		29.6
Delay Factor k	0.50	0.50			0.50	0.50				0.50		0.50
Incremental Delay d_2	18.1	0.5			2.8	0.0				12.0		2.2
PF Factor	1.000	1.000			1.000	1.000				1.000		1.000
Control Delay	53.4	4.2			14.5	6.2				44.6		31.7
Lane Group LOS	D	A			B	A				D		C
Approach Delay	8.3			14.4						43.1		
Approach LOS	A			B						D		
Intersection Delay	16.5			Intersection LOS						B		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway / Live Oak
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	PM Peak Hour	Analysis Year	Existing + Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2			2	1				2		1
Lane Group	L	T			T	R				L		R
Volume (vph)	44	1647			949	487				1078		122
% Heavy Vehicles	0	0			0	0				0		0
PHF	0.92	0.92			0.92	0.92				0.92		0.92
Pretimed/Actuated (P/A)	P	P			P	P				P		P
Startup Lost Time	2.0	2.0			2.0	2.0				2.0		2.0
Extension of Effective Green	2.0	2.0			2.0	2.0				2.0		2.0
Arrival Type	3	3			3	3				3		3
Unit Extension	3.0	3.0			3.0	3.0				3.0		3.0
Ped/Bike/RTOR Volume	0	0		0	0	477				0	0	0
Lane Width	12.0	12.0			12.0	12.0				12.0		12.0
Parking/Grade/Parking	N	0	N	N	0	N				N	0	N
Parking/Hour												
Bus Stops/Hour	0	0			0	0				0		0
Minimum Pedestrian Time		3.2			3.2						3.2	

Phasing	EB Only	Thru & RT	03	04	SB Only	06	07	08
Timing	G = 6.6	G = 26.7	G =	G =	G = 24.7	G =	G =	G =
	Y = 4	Y = 4	Y =	Y =	Y = 4	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 70.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	48	1790			1032	11				1172		133
Lane Group Capacity	170	1928			1380	616				1237		570
v/c Ratio	0.28	0.93			0.75	0.02				0.95		0.23
Green Ratio	0.09	0.53			0.38	0.38				0.35		0.35
Uniform Delay d_1	29.5	15.1			18.7	13.5				22.0		16.0
Delay Factor k	0.50	0.50			0.50	0.50				0.50		0.50
Incremental Delay d_2	4.1	9.4			3.7	0.1				15.7		1.0
PF Factor	1.000	1.000			1.000	1.000				1.000		1.000
Control Delay	33.6	24.5			22.5	13.5				37.8		16.9
Lane Group LOS	C	C			C	B				D		B
Approach Delay	24.7			22.4						35.6		
Approach LOS	C			C						D		
Intersection Delay	27.5			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway & Azusa Canyon
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	AM Peak Hour	Analysis Year	Existing + Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Lane Group	L	TR		L	TR		L	LT	R	L	TR	
Volume (vph)	21	842	94	74	2100	21	794	15	135	10	5	11
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	A	P	P	P
Startup Lost Time	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Arrival Type	3	3		3	3		3	3	3	3	3	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0		0	0	0	0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	NB Only	SB Only	07	08
Timing	G = 4.0	G = 168.0	G =	G =	G = 26.0	G = 4.0	G =	G =
	Y = 4	Y = 4	Y =	Y =	Y = 4	Y = 4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 218.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	23	1017		80	2306		863	16	147	11	17	
Lane Group Capacity	33	2746		33	2784		215	227	193	33	31	
v/c Ratio	0.70	0.37		2.42	0.83		4.01	0.07	0.76	0.33	0.55	
Green Ratio	0.02	0.77		0.02	0.77		0.12	0.12	0.12	0.02	0.02	
Uniform Delay d_1	106.4	8.0		107.0	15.9		96.0	85.3	93.0	105.7	106.1	
Delay Factor k	0.50	0.50		0.50	0.50		0.50	0.50	0.31	0.50	0.50	
Incremental Delay d_2	79.3	0.4		723.2	3.0		1367	0.6	16.3	25.2	55.4	
PF Factor	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	
Control Delay	185.7	8.4		830.2	18.9		1463	85.9	109.3	130.8	161.5	
Lane Group LOS	F	A		F	B		F	F	F	F	F	
Approach Delay	12.3			46.1			1248			149.5		
Approach LOS	B			D			F			F		
Intersection Delay	314.1			Intersection LOS						F		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway & Azusa Canyon
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	PM Peak Hour	Analysis Year	Existing + Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Lane Group	L	TR		L	TR		L	LT	R	L	TR	
Volume (vph)	33	1928	168	186	1055	11	121	12	178	13	7	25
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	A	P	P	P
Startup Lost Time	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Arrival Type	3	3		3	3		3	3	3	3	3	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0		0	0	0	0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	NB Only	SB Only	07	08
Timing	G = 13.0	G = 71.0	G =	G =	G = 15.0	G = 5.0	G =	G =
	Y = 4	Y = 4	Y =	Y =	Y = 4	Y = 4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 120.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	36	2279		202	1159		132	13	193	14	35	
Lane Group Capacity	196	2115		196	2137		226	238	202	75	70	
v/c Ratio	0.18	1.08		1.03	0.54		0.58	0.05	0.96	0.19	0.50	
Green Ratio	0.11	0.59		0.11	0.59		0.13	0.13	0.13	0.04	0.04	
Uniform Delay d_1	48.7	24.5		53.5	14.7		49.6	46.3	52.2	55.5	56.3	
Delay Factor k	0.50	0.50		0.50	0.50		0.50	0.50	0.47	0.50	0.50	
Incremental Delay d_2	2.1	44.2		72.5	1.0		10.6	0.4	50.5	5.4	23.3	
PF Factor	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	
Control Delay	50.7	68.7		126.0	15.7		60.1	46.7	102.7	61.0	79.6	
Lane Group LOS	D	E		F	B		E	D	F	E	E	
Approach Delay	68.4			32.1			83.9			74.3		
Approach LOS	E			C			F			E		
Intersection Delay	57.6			Intersection LOS						E		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway & Irwindale Ave.
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	AM Peak Hour	Analysis Year	Existing + Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	3	0	1	2	0	1	2	0	1	2	1
Lane Group	L	TR		L	TR		L	TR		L	T	R
Volume (vph)	320	525	62	51	1451	149	223	622	68	140	462	440
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Extension of Effective Green	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Arrival Type	3	3		3	3		3	3		3	3	3
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	45
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0		0	0		0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 11.0	G = 54.0	G =	G =	G = 13.2	G = 25.8	G =	G =
	Y = 4	Y = 4	Y =	Y =	Y = 4	Y = 4	Y =	Y =
Duration of Analysis (hrs) = 0.25					Cycle Length C = 120.0			

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	348	638		55	1739		242	750		152	502	429
Lane Group Capacity	321	2292		165	1605		199	766		199	778	614
v/c Ratio	1.08	0.28		0.33	1.08		1.22	0.98		0.76	0.65	0.70
Green Ratio	0.09	0.45		0.09	0.45		0.11	0.21		0.11	0.21	0.34
Uniform Delay d_1	54.5	20.7		51.1	33.0		53.4	46.8		51.9	42.9	34.3
Delay Factor k	0.50	0.50		0.50	0.50		0.50	0.50		0.50	0.50	0.50
Incremental Delay d_2	74.5	0.3		5.4	48.8		134.1	27.8		23.9	4.1	6.5
PF Factor	1.000	1.000		1.000	1.000		1.000	1.000		1.000	1.000	1.000
Control Delay	129.0	21.1		56.4	81.8		187.5	74.7		75.8	47.0	40.8
Lane Group LOS	F	C		E	F		F	E		E	D	D
Approach Delay	59.2			81.0			102.2			48.6		
Approach LOS	E			F			F			D		
Intersection Delay	73.7			Intersection LOS						E		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway & Irwindale Ave.
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	PM Peak Hour	Analysis Year	Existing + Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	3	0	1	2	0	1	2	0	1	2	1
Lane Group	L	TR		L	TR		L	TR		L	T	R
Volume (vph)	376	1518	142	138	584	98	94	560	109	260	783	372
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Extension of Effective Green	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Arrival Type	3	3		3	3		3	3		3	3	3
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	37
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0		0	0		0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	EB Only	Thru & RT	04	Excl. Left	SB Only	Thru & RT	08
Timing	G = 8.0	G = 10.5	G = 26.1	G =	G = 8.9	G = 6.2	G = 26.3	G =
	Y = 4	Y = 4	Y = 4	Y =	Y = 4	Y = 4	Y = 4	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 110.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	409	1804		150	742		102	727		283	851	364
Lane Group Capacity	717	1886		131	840		146	844		313	1201	712
v/c Ratio	0.57	0.96		1.15	0.88		0.70	0.86		0.90	0.71	0.51
Green Ratio	0.20	0.37		0.07	0.24		0.08	0.24		0.17	0.33	0.44
Uniform Delay d_1	39.4	33.8		51.0	40.5		49.2	40.1		44.6	32.1	22.2
Delay Factor k	0.50	0.50		0.50	0.50		0.50	0.50		0.50	0.50	0.50
Incremental Delay d_2	3.3	12.7		122.9	13.0		24.2	11.2		31.4	3.5	2.6
PF Factor	1.000	1.000		1.000	1.000		1.000	1.000		1.000	1.000	1.000
Control Delay	42.7	46.6		173.9	53.5		73.5	51.3		75.9	35.7	24.8
Lane Group LOS	D	D		F	D		E	D		E	D	C
Approach Delay	45.8			73.7			54.1			40.6		
Approach LOS	D			E			D			D		
Intersection Delay	50.2			Intersection LOS						D		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Irwindale & Cypress
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	AM Peak Hour	Analysis Year	Existing + Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Lane Group	L	TR		L	TR		L	TR		L	TR	
Volume (vph)	35	406	49	121	796	51	48	184	52	114	558	146
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Arrival Type	3	3		3	3		3	3		3	3	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0		0	0		0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	EW Perm	02	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 20.9	G =	G =	G =	G = 8.0	G = 19.1	G =	G =
	Y = 4	Y =	Y =	Y =	Y = 4	Y = 4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 60.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	38	494		132	920		52	257		124	766	
Lane Group Capacity	127	1240		274	1249		241	1113		241	1116	
v/c Ratio	0.30	0.40		0.48	0.74		0.22	0.23		0.51	0.69	
Green Ratio	0.35	0.35		0.35	0.35		0.13	0.32		0.13	0.32	
Uniform Delay d_1	14.2	14.8		15.3	17.1		23.2	15.0		24.2	17.8	
Delay Factor k	0.50	0.50		0.50	0.50		0.50	0.50		0.50	0.50	
Incremental Delay d_2	5.9	1.0		6.0	3.9		2.0	0.5		7.6	3.4	
PF Factor	1.000	1.000		1.000	1.000		1.000	1.000		1.000	1.000	
Control Delay	20.2	15.8		21.3	21.0		25.2	15.5		31.8	21.3	
Lane Group LOS	C	B		C	C		C	B		C	C	
Approach Delay	16.1			21.1			17.2			22.8		
Approach LOS	B			C			B			C		
Intersection Delay	20.2			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Irwindale & Cypress
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	PM Peak Hour	Analysis Year	Existing + Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Lane Group	L	TR		L	TR		L	TR		L	TR	
Volume (vph)	199	1002	68	65	484	164	112	737	101	57	207	53
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Arrival Type	3	3		3	3		3	3		3	3	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0		0	0		0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	EW Perm	02	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 26.0	G =	G =	G =	G = 8.0	G = 25.0	G =	G =
	Y = 4	Y =	Y =	Y =	Y = 4	Y = 4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 71.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	216	1163		71	704		122	911		62	283	
Lane Group Capacity	189	1312		107	1274		203	1251		203	1235	
v/c Ratio	1.14	0.89		0.66	0.55		0.60	0.73		0.31	0.23	
Green Ratio	0.37	0.37		0.37	0.37		0.11	0.35		0.11	0.35	
Uniform Delay d_1	22.5	21.1		18.8	17.9		30.0	20.0		28.9	16.2	
Delay Factor k	0.50	0.50		0.50	0.50		0.50	0.50		0.50	0.50	
Incremental Delay d_2	109.2	9.1		28.0	1.7		12.5	3.7		3.9	0.4	
PF Factor	1.000	1.000		1.000	1.000		1.000	1.000		1.000	1.000	
Control Delay	131.7	30.2		46.8	19.6		42.5	23.8		32.8	16.6	
Lane Group LOS	F	C		D	B		D	C		C	B	
Approach Delay	46.1			22.1			26.0			19.5		
Approach LOS	D			C			C			B		
Intersection Delay	32.4			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway & Vincent
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	AM Peak Hour	Analysis Year	Existing + Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Lane Group	L	T	R	L	TR		L	TR		L	TR	
Volume (vph)	107	426	193	107	1275	88	282	343	53	37	273	152
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Arrival Type	3	3	3	3	3		3	3		3	3	
Unit Extension	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0		12.0	12.0		12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0		0	0		0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 34.4	G =	G =	G =	G = 27.6	G =	G =	G =
	Y = 4	Y =	Y =	Y =	Y = 4	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 70.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	116	463	210	116	1482		307	431		40	462	
Lane Group Capacity	109	1778	794	433	1760		330	1398		347	1350	
v/c Ratio	1.06	0.26	0.26	0.27	0.84		0.93	0.31		0.12	0.34	
Green Ratio	0.49	0.49	0.49	0.49	0.49		0.39	0.39		0.39	0.39	
Uniform Delay d_1	17.8	10.4	10.4	10.4	15.4		20.3	14.6		13.5	14.8	
Delay Factor k	0.50	0.50	0.50	0.50	0.50		0.50	0.50		0.50	0.50	
Incremental Delay d_2	104.5	0.4	0.8	1.5	5.1		34.6	0.6		0.7	0.7	
PF Factor	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
Control Delay	122.3	10.7	11.2	11.9	20.5		54.9	15.2		14.1	15.5	
Lane Group LOS	F	B	B	B	C		D	B		B	B	
Approach Delay	27.3			19.9			31.7			15.4		
Approach LOS	C			B			C			B		
Intersection Delay	23.3			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway & Vincent
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	PM Peak Hour	Analysis Year	Existing + Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Lane Group	L	T	R	L	TR		L	TR		L	TR	
Volume (vph)	256	1396	242	103	496	32	90	348	138	39	251	129
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Arrival Type	3	3	3	3	3		3	3		3	3	
Unit Extension	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0		12.0	12.0		12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0		0	0		0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 39.0	G =	G =	G =	G = 13.0	G =	G =	G =
	Y = 4	Y =	Y =	Y =	Y = 4	Y =	Y =	Y =

Duration of Analysis (hrs) = 0.25 | Cycle Length C = 60.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	278	1517	263	112	574		98	528		42	413	
Lane Group Capacity	536	2352	1050	142	2330		171	750		127	744	
v/c Ratio	0.52	0.64	0.25	0.79	0.25		0.57	0.70		0.33	0.56	
Green Ratio	0.65	0.65	0.65	0.65	0.65		0.22	0.22		0.22	0.22	
Uniform Delay d_1	5.5	6.3	4.4	7.5	4.4		21.0	21.7		19.8	20.9	
Delay Factor k	0.50	0.50	0.50	0.50	0.50		0.50	0.50		0.50	0.50	
Incremental Delay d_2	3.6	1.4	0.6	34.7	0.3		13.2	5.5		6.8	3.0	
PF Factor	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
Control Delay	9.1	7.7	5.0	42.2	4.6		34.2	27.2		26.7	23.9	
Lane Group LOS	A	A	A	D	A		C	C		C	C	
Approach Delay	7.5			10.8			28.3			24.2		
Approach LOS	A			B			C			C		
Intersection Delay	13.5			Intersection LOS						B		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway / Live Oak
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	AM Peak Hour	Analysis Year	Future Without Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2			2	1				2		1
Lane Group	L	T			T	R				L		R
Volume (vph)	93	1302			1766	1503				609		55
% Heavy Vehicles	0	0			0	0				0		0
PHF	0.92	0.92			0.92	0.92				0.92		0.92
Pretimed/Actuated (P/A)	P	P			P	P				P		P
Startup Lost Time	2.0	2.0			2.0	2.0				2.0		2.0
Extension of Effective Green	2.0	2.0			2.0	2.0				2.0		2.0
Arrival Type	3	3			3	3				3		3
Unit Extension	3.0	3.0			3.0	3.0				3.0		3.0
Ped/Bike/RTOR Volume	0	0		0	0	1371				0	0	0
Lane Width	12.0	12.0			12.0	12.0				12.0		12.0
Parking/Grade/Parking	N	0	N	N	0	N				N	0	N
Parking/Hour												
Bus Stops/Hour	0	0			0	0				0		0
Minimum Pedestrian Time		3.2			3.2						3.2	

Phasing	EB Only	Thru & RT	03	04	SB Only	06	07	08
Timing	G = 6.0	G = 47.9	G =	G =	G = 14.1	G =	G =	G =
	Y = 4	Y = 4	Y =	Y =	Y = 4	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 80.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	101	1415			1920	143				662		60
Lane Group Capacity	135	2619			2166	967				618		285
v/c Ratio	0.75	0.54			0.89	0.15				1.07		0.21
Green Ratio	0.08	0.72			0.60	0.60				0.18		0.18
Uniform Delay d_1	36.3	5.0			13.7	7.1				33.0		28.2
Delay Factor k	0.50	0.50			0.50	0.50				0.50		0.50
Incremental Delay d_2	31.1	0.8			5.8	0.3				56.8		1.7
PF Factor	1.000	1.000			1.000	1.000				1.000		1.000
Control Delay	67.3	5.8			19.5	7.4				89.7		29.9
Lane Group LOS	E	A			B	A				F		C
Approach Delay	9.9			18.7						84.7		
Approach LOS	A			B						F		
Intersection Delay	26.7			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway / Live Oak
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	PM Peak Hour	Analysis Year	Future Without Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2			2	1				2		1
Lane Group	L	T			T	R				L		R
Volume (vph)	45	1919			1225	662				1252		124
% Heavy Vehicles	0	0			0	0				0		0
PHF	0.92	0.92			0.92	0.92				0.92		0.92
Pretimed/Actuated (P/A)	P	P			P	P				P		P
Startup Lost Time	2.0	2.0			2.0	2.0				2.0		2.0
Extension of Effective Green	2.0	2.0			2.0	2.0				2.0		2.0
Arrival Type	3	3			3	3				3		3
Unit Extension	3.0	3.0			3.0	3.0				3.0		3.0
Ped/Bike/RTOR Volume	0	0		0	0	477				0	0	0
Lane Width	12.0	12.0			12.0	12.0				12.0		12.0
Parking/Grade/Parking	N	0	N	N	0	N				N	0	N
Parking/Hour												
Bus Stops/Hour	0	0			0	0				0		0
Minimum Pedestrian Time		3.2			3.2						3.2	

Phasing	EB Only	Thru & RT	03	04	SB Only	06	07	08
Timing	G = 6.3	G = 45.0	G =	G =	G = 36.7	G =	G =	G =
	Y = 4	Y = 4	Y =	Y =	Y = 4	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 100.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	49	2086			1332	201				1361		135
Lane Group Capacity	114	2001			1628	727				1286		593
v/c Ratio	0.43	1.04			0.82	0.28				1.06		0.23
Green Ratio	0.06	0.55			0.45	0.45				0.37		0.37
Uniform Delay d_1	45.1	22.4			23.9	17.3				31.6		21.9
Delay Factor k	0.50	0.50			0.50	0.50				0.50		0.50
Incremental Delay d_2	11.4	32.2			4.7	0.9				42.1		0.9
PF Factor	1.000	1.000			1.000	1.000				1.000		1.000
Control Delay	56.5	54.6			28.6	18.2				73.7		22.8
Lane Group LOS	E	D			C	B				E		C
Approach Delay	54.6			27.3						69.1		
Approach LOS	D			C						E		
Intersection Delay	50.7			Intersection LOS						D		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway & Azusa Canyon
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	AM Peak Hour	Analysis Year	Future Without Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Lane Group	L	TR		L	TR		L	LT	R	L	TR	
Volume (vph)	21	1125	189	196	2527	21	838	15	201	10	5	11
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	A	P	P	P
Startup Lost Time	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Arrival Type	3	3		3	3		3	3	3	3	3	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0		0	0	0	0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	NB Only	SB Only	07	08
Timing	G = 7.3	G = 66.6	G =	G =	G = 25.9	G = 4.2	G =	G =
	Y = 4	Y = 4	Y =	Y =	Y = 4	Y = 4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 120.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	23	1428		213	2770		911	16	218	11	17	
Lane Group Capacity	110	1965		110	2005		390	410	349	63	59	
v/c Ratio	0.21	0.73		1.94	1.38		2.34	0.04	0.62	0.17	0.29	
Green Ratio	0.06	0.56		0.06	0.56		0.22	0.22	0.22	0.04	0.04	
Uniform Delay d_1	53.6	19.9		56.3	26.7		47.0	37.2	42.6	56.2	56.4	
Delay Factor k	0.50	0.50		0.50	0.50		0.50	0.50	0.21	0.50	0.50	
Incremental Delay d_2	4.3	2.4		452.9	174.9		609.1	0.2	3.5	5.9	11.9	
PF Factor	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	
Control Delay	57.9	22.3		509.2	201.6		656.2	37.4	46.1	62.2	68.3	
Lane Group LOS	E	C		F	F		F	D	D	E	E	
Approach Delay	22.9			223.6			531.4			65.9		
Approach LOS	C			F			F			E		
Intersection Delay	233.7			Intersection LOS						F		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway & Azusa Canyon
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	PM Peak Hour	Analysis Year	Future Without Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Lane Group	L	TR		L	TR		L	LT	R	L	TR	
Volume (vph)	34	2335	205	256	1391	11	216	12	298	13	7	26
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	A	P	P	P
Startup Lost Time	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Arrival Type	3	3		3	3		3	3	3	3	3	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0		0	0	0	0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	NB Only	SB Only	07	08
Timing	G = 9.7	G = 74.3	G =	G =	G = 15.8	G = 4.2	G =	G =
	Y = 4	Y = 4	Y =	Y =	Y = 4	Y = 4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 120.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	37	2761		278	1524		235	13	324	14	36	
Lane Group Capacity	146	2213		146	2237		238	250	213	63	59	
v/c Ratio	0.25	1.25		1.90	0.68		0.99	0.05	1.52	0.22	0.61	
Green Ratio	0.08	0.62		0.08	0.62		0.13	0.13	0.13	0.04	0.04	
Uniform Delay d_1	51.8	22.9		55.2	15.1		52.0	45.6	52.1	56.3	57.1	
Delay Factor k	0.50	0.50		0.50	0.50		0.50	0.50	0.50	0.50	0.50	
Incremental Delay d_2	4.1	115.4		431.3	1.7		55.2	0.4	257.0	8.0	39.1	
PF Factor	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	
Control Delay	55.9	138.2		486.5	16.8		107.2	45.9	309.1	64.3	96.1	
Lane Group LOS	E	F		F	B		F	D	F	E	F	
Approach Delay	137.2			89.2			220.2			87.2		
Approach LOS	F			F			F			F		
Intersection Delay	129.2			Intersection LOS						F		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway & Irwindale Ave.
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	AM Peak Hour	Analysis Year	Future Without Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	3	0	1	2	0	1	2	0	1	2	1
Lane Group	L	TR		L	TR		L	TR		L	T	R
Volume (vph)	418	678	152	42	1727	142	344	634	45	124	471	605
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Extension of Effective Green	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Arrival Type	3	3		3	3		3	3		3	3	3
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	45
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0		0	0		0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 12.6	G = 56.8	G =	G =	G = 13.4	G = 21.2	G =	G =
	Y = 4	Y = 4	Y =	Y =	Y = 4	Y = 4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 120.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	454	902		46	2031		374	738		135	512	609
Lane Group Capacity	368	2383		190	1693		202	633		202	639	569
v/c Ratio	1.23	0.38		0.24	1.20		1.85	1.17		0.67	0.80	1.07
Green Ratio	0.11	0.47		0.11	0.47		0.11	0.18		0.11	0.18	0.32
Uniform Delay d_1	53.7	20.3		49.3	31.6		53.3	49.4		51.2	47.4	41.1
Delay Factor k	0.50	0.50		0.50	0.50		0.50	0.50		0.50	0.50	0.50
Incremental Delay d_2	126.6	0.5		3.0	95.8		401.7	91.0		16.2	10.2	57.9
PF Factor	1.000	1.000		1.000	1.000		1.000	1.000		1.000	1.000	1.000
Control Delay	180.3	20.7		52.3	127.4		455.0	140.4		67.4	57.6	99.0
Lane Group LOS	F	C		D	F		F	F		E	E	F
Approach Delay	74.2			125.8			246.2			78.7		
Approach LOS	E			F			F			E		
Intersection Delay	126.6			Intersection LOS						F		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway & Irwindale Ave.
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	PM Peak Hour	Analysis Year	Future Without Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	3	0	1	2	0	1	2	0	1	2	1
Lane Group	L	TR		L	TR		L	TR		L	T	R
Volume (vph)	523	1779	259	105	769	63	198	571	102	258	799	488
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Extension of Effective Green	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Arrival Type	3	3		3	3		3	3		3	3	3
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	37
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0		0	0		0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	EB Only	Thru & RT	04	Excl. Left	SB Only	Thru & RT	08
Timing	G = 6.0	G = 11.6	G = 40.7	G =	G = 11.2	G = 7.0	G = 19.5	G =
	Y = 4	Y = 4	Y = 4	Y =	Y = 4	Y = 4	Y = 4	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 120.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	568	2216		114	904		215	732		280	868	490
Lane Group Capacity	631	2382		90	1213		168	574		334	920	545
v/c Ratio	0.90	0.93		1.27	0.75		1.28	1.28		0.84	0.94	0.90
Green Ratio	0.18	0.47		0.05	0.34		0.09	0.16		0.19	0.25	0.34
Uniform Delay d_1	48.1	30.0		57.0	35.1		54.4	50.3		47.2	43.9	37.8
Delay Factor k	0.50	0.50		0.50	0.50		0.50	0.50		0.50	0.50	0.50
Incremental Delay d_2	18.3	8.0		182.5	4.2		163.6	137.0		21.6	18.8	20.3
PF Factor	1.000	1.000		1.000	1.000		1.000	1.000		1.000	1.000	1.000
Control Delay	66.4	38.0		239.5	39.3		218.0	187.3		68.7	62.7	58.1
Lane Group LOS	E	D		F	D		F	F		E	E	E
Approach Delay	43.8			61.7			194.2			62.4		
Approach LOS	D			E			F			E		
Intersection Delay	73.7			Intersection LOS						E		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Irwindale & Cypress
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	AM Peak Hour	Analysis Year	Future Without Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Lane Group	L	TR		L	TR		L	TR		L	TR	
Volume (vph)	36	414	50	123	812	52	49	280	53	116	652	149
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Arrival Type	3	3		3	3		3	3		3	3	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0		0	0		0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	EW Perm	02	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 20.9	G =	G =	G =	G = 8.0	G = 19.1	G =	G =
	Y = 4	Y =	Y =	Y =	Y = 4	Y = 4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 60.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	39	504		134	940		53	362		126	871	
Lane Group Capacity	127	1240		269	1249		241	1124		241	1120	
v/c Ratio	0.31	0.41		0.50	0.75		0.22	0.32		0.52	0.78	
Green Ratio	0.35	0.35		0.35	0.35		0.13	0.32		0.13	0.32	
Uniform Delay d_1	14.3	14.8		15.4	17.3		23.2	15.5		24.2	18.5	
Delay Factor k	0.50	0.50		0.50	0.50		0.50	0.50		0.50	0.50	
Incremental Delay d_2	6.2	1.0		6.5	4.2		2.1	0.8		7.9	5.3	
PF Factor	1.000	1.000		1.000	1.000		1.000	1.000		1.000	1.000	
Control Delay	20.4	15.8		21.9	21.5		25.3	16.3		32.1	23.9	
Lane Group LOS	C	B		C	C		C	B		C	C	
Approach Delay	16.2			21.5			17.4			24.9		
Approach LOS	B			C			B			C		
Intersection Delay	21.1			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Irwindale & Cypress
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	PM Peak Hour	Analysis Year	Future Without Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Lane Group	L	TR		L	TR		L	TR		L	TR	
Volume (vph)	202	1022	69	66	494	167	114	845	103	58	303	54
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Arrival Type	3	3		3	3		3	3		3	3	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0		0	0		0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	EW Perm	02	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 26.0	G =	G =	G =	G = 8.5	G = 23.5	G =	G =
	Y = 4	Y =	Y =	Y =	Y = 4	Y = 4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 70.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	220	1186		72	719		124	1030		63	388	
Lane Group Capacity	188	1331		108	1293		219	1195		219	1187	
v/c Ratio	1.17	0.89		0.67	0.56		0.57	0.86		0.29	0.33	
Green Ratio	0.37	0.37		0.37	0.37		0.12	0.34		0.12	0.34	
Uniform Delay d_1	22.0	20.7		18.4	17.4		29.0	21.7		28.0	17.3	
Delay Factor k	0.50	0.50		0.50	0.50		0.50	0.50		0.50	0.50	
Incremental Delay d_2	119.0	9.3		28.1	1.7		10.2	8.3		3.3	0.7	
PF Factor	1.000	1.000		1.000	1.000		1.000	1.000		1.000	1.000	
Control Delay	141.0	30.0		46.5	19.2		39.2	30.0		31.3	18.1	
Lane Group LOS	F	C		D	B		D	C		C	B	
Approach Delay	47.3			21.6			31.0			19.9		
Approach LOS	D			C			C			B		
Intersection Delay	33.8			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway & Vincent
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	AM Peak Hour	Analysis Year	Future Without Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Lane Group	L	T	R	L	TR		L	TR		L	TR	
Volume (vph)	80	565	227	109	1478	90	292	349	54	37	278	142
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Arrival Type	3	3	3	3	3		3	3		3	3	
Unit Extension	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0		12.0	12.0		12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0		0	0		0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 36.3	G =	G =	G =	G = 25.7	G =	G =	G =
	Y = 4	Y =	Y =	Y =	Y = 4	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 70.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	87	614	247	118	1705		317	438		40	456	
Lane Group Capacity	108	1876	837	375	1860		304	1302		314	1261	
v/c Ratio	0.81	0.33	0.30	0.31	0.92		1.04	0.34		0.13	0.36	
Green Ratio	0.52	0.52	0.52	0.52	0.52		0.37	0.37		0.37	0.37	
Uniform Delay d_1	13.9	9.8	9.6	9.7	15.5		22.1	16.0		14.7	16.2	
Delay Factor k	0.50	0.50	0.50	0.50	0.50		0.50	0.50		0.50	0.50	
Incremental Delay d_2	45.4	0.5	0.9	2.2	8.6		63.2	0.7		0.8	0.8	
PF Factor	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
Control Delay	59.4	10.2	10.5	11.9	24.1		85.4	16.7		15.5	17.0	
Lane Group LOS	E	B	B	B	C		F	B		B	B	
Approach Delay	14.8			23.3			45.5			16.9		
Approach LOS	B			C			D			B		
Intersection Delay	24.7			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway & Vincent
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	PM Peak Hour	Analysis Year	Future Without Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Lane Group	L	T	R	L	TR		L	TR		L	TR	
Volume (vph)	267	1598	278	105	653	33	116	354	141	40	256	132
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Arrival Type	3	3	3	3	3		3	3		3	3	
Unit Extension	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0		12.0	12.0		12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0		0	0		0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 39.0	G =	G =	G =	G = 13.0	G =	G =	G =
	Y = 4	Y =	Y =	Y =	Y = 4	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 60.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	290	1737	302	114	746		126	538		43	421	
Lane Group Capacity	434	2352	1050	127	2334		167	750		127	744	
v/c Ratio	0.67	0.74	0.29	0.90	0.32		0.75	0.72		0.34	0.57	
Green Ratio	0.65	0.65	0.65	0.65	0.65		0.22	0.22		0.22	0.22	
Uniform Delay d_1	6.5	7.1	4.5	8.8	4.6		22.0	21.8		19.9	21.0	
Delay Factor k	0.50	0.50	0.50	0.50	0.50		0.50	0.50		0.50	0.50	
Incremental Delay d_2	7.9	2.1	0.7	56.1	0.4		26.7	5.8		7.1	3.1	
PF Factor	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
Control Delay	14.4	9.2	5.2	64.9	5.0		48.7	27.6		27.0	24.1	
Lane Group LOS	B	A	A	E	A		D	C		C	C	
Approach Delay	9.3			12.9			31.6			24.4		
Approach LOS	A			B			C			C		
Intersection Delay	15.1			Intersection LOS						B		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway / Live Oak
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	AM Peak Hour	Analysis Year	Future With Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2			2	1				2		1
Lane Group	L	T			T	R				L		R
Volume (vph)	93	1320			1770	1506				621		55
% Heavy Vehicles	0	0			0	0				0		0
PHF	0.92	0.92			0.92	0.92				0.92		0.92
Pretimed/Actuated (P/A)	P	P			P	P				P		P
Startup Lost Time	2.0	2.0			2.0	2.0				2.0		2.0
Extension of Effective Green	2.0	2.0			2.0	2.0				2.0		2.0
Arrival Type	3	3			3	3				3		3
Unit Extension	3.0	3.0			3.0	3.0				3.0		3.0
Ped/Bike/RTOR Volume	0	0		0	0	1371				0	0	0
Lane Width	12.0	12.0			12.0	12.0				12.0		12.0
Parking/Grade/Parking	N	0	N	N	0	N				N	0	N
Parking/Hour												
Bus Stops/Hour	0	0			0	0				0		0
Minimum Pedestrian Time		3.2			3.2						3.2	

Phasing	EB Only	Thru & RT	03	04	SB Only	06	07	08
Timing	G = 6.0	G = 47.9	G =	G =	G = 14.1	G =	G =	G =
	Y = 4	Y = 4	Y =	Y =	Y = 4	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 80.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	101	1435			1924	147				675		60
Lane Group Capacity	135	2619			2166	967				618		285
v/c Ratio	0.75	0.55			0.89	0.15				1.09		0.21
Green Ratio	0.08	0.72			0.60	0.60				0.18		0.18
Uniform Delay d_1	36.3	5.1			13.8	7.1				33.0		28.2
Delay Factor k	0.50	0.50			0.50	0.50				0.50		0.50
Incremental Delay d_2	31.1	0.8			5.9	0.3				63.9		1.7
PF Factor	1.000	1.000			1.000	1.000				1.000		1.000
Control Delay	67.3	5.9			19.7	7.4				96.9		29.9
Lane Group LOS	E	A			B	A				F		C
Approach Delay	9.9			18.8						91.4		
Approach LOS	A			B						F		
Intersection Delay	27.9			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway / Live Oak
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	PM Peak Hour	Analysis Year	Future With Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2			2	1				2		1
Lane Group	L	T			T	R				L		R
Volume (vph)	45	1926			1240	672				1257		124
% Heavy Vehicles	0	0			0	0				0		0
PHF	0.92	0.92			0.92	0.92				0.92		0.92
Pretimed/Actuated (P/A)	P	P			P	P				P		P
Startup Lost Time	2.0	2.0			2.0	2.0				2.0		2.0
Extension of Effective Green	2.0	2.0			2.0	2.0				2.0		2.0
Arrival Type	3	3			3	3				3		3
Unit Extension	3.0	3.0			3.0	3.0				3.0		3.0
Ped/Bike/RTOR Volume	0	0		0	0	477				0	0	0
Lane Width	12.0	12.0			12.0	12.0				12.0		12.0
Parking/Grade/Parking	N	0	N	N	0	N				N	0	N
Parking/Hour												
Bus Stops/Hour	0	0			0	0				0		0
Minimum Pedestrian Time		3.2			3.2						3.2	

Phasing	EB Only	Thru & RT	03	04	SB Only	06	07	08
Timing	G = 6.3	G = 45.0	G =	G =	G = 36.7	G =	G =	G =
	Y = 4	Y = 4	Y =	Y =	Y = 4	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 100.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	49	2093			1348	212				1366		135
Lane Group Capacity	114	2001			1628	727				1286		593
v/c Ratio	0.43	1.05			0.83	0.29				1.06		0.23
Green Ratio	0.06	0.55			0.45	0.45				0.37		0.37
Uniform Delay d_1	45.1	22.4			24.1	17.4				31.6		21.9
Delay Factor k	0.50	0.50			0.50	0.50				0.50		0.50
Incremental Delay d_2	11.4	33.4			5.0	1.0				43.4		0.9
PF Factor	1.000	1.000			1.000	1.000				1.000		1.000
Control Delay	56.5	55.7			29.1	18.4				75.1		22.8
Lane Group LOS	E	E			C	B				E		C
Approach Delay	55.7			27.7						70.4		
Approach LOS	E			C						E		
Intersection Delay	51.5			Intersection LOS						D		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway & Azusa Canyon
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	AM Peak Hour	Analysis Year	Future With Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Lane Group	L	TR		L	TR		L	LT	R	L	TR	
Volume (vph)	21	1155	189	197	2534	21	838	15	207	10	5	11
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	A	P	P	P
Startup Lost Time	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Arrival Type	3	3		3	3		3	3	3	3	3	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0		0	0	0	0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	NB Only	SB Only	07	08
Timing	G = 7.3	G = 67.0	G =	G =	G = 25.5	G = 4.2	G =	G =
	Y = 4	Y = 4	Y =	Y =	Y = 4	Y = 4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 120.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	23	1460		214	2777		911	16	225	11	17	
Lane Group Capacity	110	1977		110	2017		384	404	343	63	59	
v/c Ratio	0.21	0.74		1.95	1.38		2.37	0.04	0.66	0.17	0.29	
Green Ratio	0.06	0.56		0.06	0.56		0.21	0.21	0.21	0.04	0.04	
Uniform Delay d_1	53.6	19.9		56.3	26.5		47.3	37.5	43.2	56.2	56.4	
Delay Factor k	0.50	0.50		0.50	0.50		0.50	0.50	0.23	0.50	0.50	
Incremental Delay d_2	4.3	2.5		456.8	172.8		625.6	0.2	4.5	5.9	11.9	
PF Factor	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	
Control Delay	57.9	22.4		513.2	199.3		672.8	37.7	47.7	62.2	68.3	
Lane Group LOS	E	C		F	F		F	D	D	E	E	
Approach Delay	23.0			221.7			541.9			65.9		
Approach LOS	C			F			F			E		
Intersection Delay	234.1			Intersection LOS						F		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway & Azusa Canyon
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	PM Peak Hour	Analysis Year	Future With Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Lane Group	L	TR		L	TR		L	LT	R	L	TR	
Volume (vph)	34	2347	205	261	1417	11	216	12	300	13	7	26
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	A	P	P	P
Startup Lost Time	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Arrival Type	3	3		3	3		3	3	3	3	3	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0		0	0	0	0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	NB Only	SB Only	07	08
Timing	G = 9.7	G = 74.5	G =	G =	G = 15.7	G = 4.1	G =	G =
	Y = 4	Y = 4	Y =	Y =	Y = 4	Y = 4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 120.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	37	2774		284	1552		235	13	326	14	36	
Lane Group Capacity	146	2219		146	2243		236	249	211	62	57	
v/c Ratio	0.25	1.25		1.95	0.69		1.00	0.05	1.55	0.23	0.63	
Green Ratio	0.08	0.62		0.08	0.62		0.13	0.13	0.13	0.03	0.03	
Uniform Delay d_1	51.8	22.7		55.1	15.1		52.1	45.6	52.1	56.4	57.2	
Delay Factor k	0.50	0.50		0.50	0.50		0.50	0.50	0.50	0.50	0.50	
Incremental Delay d_2	4.1	116.5		449.4	1.8		57.5	0.4	267.4	8.3	43.0	
PF Factor	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	
Control Delay	55.9	139.2		504.5	16.9		109.6	46.0	319.6	64.7	100.2	
Lane Group LOS	E	F		F	B		F	D	F	E	F	
Approach Delay	138.1			92.3			227.4			90.2		
Approach LOS	F			F			F			F		
Intersection Delay	131.4			Intersection LOS						F		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway & Irwindale Ave.
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	AM Peak Hour	Analysis Year	Future With Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	3	0	1	2	0	1	2	0	1	2	1
Lane Group	L	TR		L	TR		L	TR		L	T	R
Volume (vph)	418	714	152	52	1736	152	344	634	69	142	471	605
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Extension of Effective Green	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Arrival Type	3	3		3	3		3	3		3	3	3
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	45
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0		0	0		0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 12.7	G = 56.5	G =	G =	G = 13.3	G = 21.5	G =	G =
	Y = 4	Y = 4	Y =	Y =	Y = 4	Y = 4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 120.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	454	941		57	2052		374	764		154	512	609
Lane Group Capacity	371	2373		191	1683		200	639		200	648	575
v/c Ratio	1.22	0.40		0.30	1.22		1.87	1.20		0.77	0.79	1.06
Green Ratio	0.11	0.47		0.11	0.47		0.11	0.18		0.11	0.18	0.32
Uniform Delay d_1	53.7	20.7		49.5	31.8		53.3	49.3		51.9	47.1	40.9
Delay Factor k	0.50	0.50		0.50	0.50		0.50	0.50		0.50	0.50	0.50
Incremental Delay d_2	122.5	0.5		4.0	104.3		410.0	102.8		24.4	9.5	54.2
PF Factor	1.000	1.000		1.000	1.000		1.000	1.000		1.000	1.000	1.000
Control Delay	176.1	21.2		53.5	136.0		463.3	152.0		76.2	56.6	95.1
Lane Group LOS	F	C		D	F		F	F		E	E	F
Approach Delay	71.6			133.8			254.3			77.3		
Approach LOS	E			F			F			E		
Intersection Delay	130.2			Intersection LOS						F		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway & Irwindale Ave.
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	PM Peak Hour	Analysis Year	Future With Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	3	0	1	2	0	1	2	0	1	2	1
Lane Group	L	TR		L	TR		L	TR		L	T	R
Volume (vph)	523	1793	259	140	800	99	198	571	111	265	799	488
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Extension of Effective Green	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Arrival Type	3	3		3	3		3	3		3	3	3
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	37
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0		0	0		0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	EB Only	Thru & RT	04	Excl. Left	SB Only	Thru & RT	08
Timing	G = 6.0	G = 10.7	G = 28.6	G =	G = 11.8	G = 6.1	G = 22.8	G =
	Y = 4	Y = 4	Y = 4	Y =	Y = 4	Y = 4	Y = 4	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 110.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	568	2231		152	978		215	742		288	868	490
Lane Group Capacity	660	1998		98	925		194	731		359	1082	630
v/c Ratio	0.86	1.12		1.55	1.06		1.11	1.02		0.80	0.80	0.78
Green Ratio	0.19	0.39		0.05	0.26		0.11	0.21		0.20	0.30	0.39
Uniform Delay d_1	43.3	33.4		52.0	40.7		49.1	43.6		42.0	35.5	29.4
Delay Factor k	0.50	0.50		0.50	0.50		0.50	0.50		0.50	0.50	0.50
Incremental Delay d_2	13.8	60.0		291.9	45.9		96.6	37.1		17.1	6.3	9.2
PF Factor	1.000	1.000		1.000	1.000		1.000	1.000		1.000	1.000	1.000
Control Delay	57.1	93.4		343.9	86.6		145.7	80.7		59.1	41.9	38.5
Lane Group LOS	E	F		F	F		F	F		E	D	D
Approach Delay	86.0			121.2			95.3			43.9		
Approach LOS	F			F			F			D		
Intersection Delay	82.8			Intersection LOS						F		

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SHORT REPORT

General Information		Site Information	
Analyst	*HK*	Intersection	*Irwindale & Cypress*
Agency or Co.	*Sasaki Transportation Services*	Area Type	*All other areas*
Date Performed	*8/7/2014*	Jurisdiction	*Irwindale*
Time Period	*AM Peak Hour*	Analysis Year	*Future With Project*

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Lane Group	L	TR		L	TR		L	TR		L	TR	
Volume (vph)	36	414	50	123	812	52	49	304	53	116	658	149
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Arrival Type	3	3		3	3		3	3		3	3	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0		0	0		0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	EW Perm	02	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 20.9	G =	G =	G =	G = 8.0	G = 19.1	G =	G =
	Y = 4	Y =	Y =	Y =	Y = 4	Y = 4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 60.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	39	504		134	940		53	388		126	877	
Lane Group Capacity	127	1240		269	1249		241	1126		241	1120	
v/c Ratio	0.31	0.41		0.50	0.75		0.22	0.34		0.52	0.78	
Green Ratio	0.35	0.35		0.35	0.35		0.13	0.32		0.13	0.32	
Uniform Delay d_1	14.3	14.8		15.4	17.3		23.2	15.7		24.2	18.6	
Delay Factor k	0.50	0.50		0.50	0.50		0.50	0.50		0.50	0.50	
Incremental Delay d_2	6.2	1.0		6.5	4.2		2.1	0.8		7.9	5.5	
PF Factor	1.000	1.000		1.000	1.000		1.000	1.000		1.000	1.000	
Control Delay	20.4	15.8		21.9	21.5		25.3	16.5		32.1	24.1	
Lane Group LOS	C	B		C	C		C	B		C	C	
Approach Delay	16.2			21.5			17.6			25.1		
Approach LOS	B			C			B			C		
Intersection Delay	21.2			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	*HK*	Intersection	*Irwindale & Cypress*
Agency or Co.	*Sasaki Transportation Services*	Area Type	*All other areas*
Date Performed	*8/7/2014*	Jurisdiction	*Irwindale*
Time Period	*PM Peak Hour*	Analysis Year	*Future With Project*

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Lane Group	L	TR		L	TR		L	TR		L	TR	
Volume (vph)	202	1022	69	66	494	167	114	854	103	58	324	54
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Arrival Type	3	3		3	3		3	3		3	3	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0		0	0		0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	EW Perm	02	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 26.0	G =	G =	G =	G = 8.5	G = 23.5	G =	G =
	Y = 4	Y =	Y =	Y =	Y = 4	Y = 4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 70.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	220	1186		72	719		124	1040		63	411	
Lane Group Capacity	188	1331		108	1293		219	1195		219	1188	
v/c Ratio	1.17	0.89		0.67	0.56		0.57	0.87		0.29	0.35	
Green Ratio	0.37	0.37		0.37	0.37		0.12	0.34		0.12	0.34	
Uniform Delay d_1	22.0	20.7		18.4	17.4		29.0	21.8		28.0	17.5	
Delay Factor k	0.50	0.50		0.50	0.50		0.50	0.50		0.50	0.50	
Incremental Delay d_2	119.0	9.3		28.1	1.7		10.2	8.8		3.3	0.8	
PF Factor	1.000	1.000		1.000	1.000		1.000	1.000		1.000	1.000	
Control Delay	141.0	30.0		46.5	19.2		39.2	30.6		31.3	18.3	
Lane Group LOS	F	C		D	B		D	C		C	B	
Approach Delay	47.3			21.6			31.5			20.0		
Approach LOS	D			C			C			C		
Intersection Delay	33.9			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway & Vincent
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	AM Peak Hour	Analysis Year	Future With Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Lane Group	L	T	R	L	TR		L	TR		L	TR	
Volume (vph)	117	569	231	109	1496	90	334	349	54	37	278	166
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Arrival Type	3	3	3	3	3		3	3		3	3	
Unit Extension	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0		12.0	12.0		12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0		0	0		0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 29.8	G =	G =	G =	G = 22.2	G =	G =	G =
	Y = 4	Y =	Y =	Y =	Y = 4	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 60.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	127	618	251	118	1724		363	438		40	482	
Lane Group Capacity	127	1797	802	360	1782		303	1312		326	1264	
v/c Ratio	1.00	0.34	0.31	0.33	0.97		1.20	0.33		0.12	0.38	
Green Ratio	0.50	0.50	0.50	0.50	0.50		0.37	0.37		0.37	0.37	
Uniform Delay d_1	15.1	9.2	9.0	9.1	14.6		18.9	13.6		12.5	13.9	
Delay Factor k	0.50	0.50	0.50	0.50	0.50		0.50	0.50		0.50	0.50	
Incremental Delay d_2	79.9	0.5	1.0	2.4	14.9		116.6	0.7		0.8	0.9	
PF Factor	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
Control Delay	95.0	9.7	10.0	11.5	29.5		135.5	14.3		13.2	14.7	
Lane Group LOS	F	A	B	B	C		F	B		B	B	
Approach Delay	20.6			28.4			69.2			14.6		
Approach LOS	C			C			E			B		
Intersection Delay	32.7			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway & Vincent
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	PM Peak Hour	Analysis Year	Future With Project

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Lane Group	L	T	R	L	TR		L	TR		L	TR	
Volume (vph)	272	1613	293	105	660	33	132	354	141	40	256	141
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Arrival Type	3	3	3	3	3		3	3		3	3	
Unit Extension	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0		12.0	12.0		12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0		0	0		0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 39.0	G =	G =	G =	G = 13.0	G =	G =	G =
	Y = 4	Y =	Y =	Y =	Y = 4	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 60.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	296	1753	318	114	753		143	538		43	431	
Lane Group Capacity	430	2352	1050	127	2335		163	750		127	742	
v/c Ratio	0.69	0.75	0.30	0.90	0.32		0.88	0.72		0.34	0.58	
Green Ratio	0.65	0.65	0.65	0.65	0.65		0.22	0.22		0.22	0.22	
Uniform Delay d_1	6.7	7.1	4.6	8.8	4.6		22.7	21.8		19.9	21.1	
Delay Factor k	0.50	0.50	0.50	0.50	0.50		0.50	0.50		0.50	0.50	
Incremental Delay d_2	8.7	2.2	0.7	56.1	0.4		44.0	5.8		7.1	3.3	
PF Factor	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
Control Delay	15.4	9.3	5.3	64.9	5.0		66.7	27.6		27.0	24.4	
Lane Group LOS	B	A	A	E	A		E	C		C	C	
Approach Delay	9.5			12.9			35.8			24.6		
Approach LOS	A			B			D			C		
Intersection Delay	15.9			Intersection LOS						B		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway & Irwindale Ave.
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	AM Peak Hour	Analysis Year	Future W/ Project W/Mitigation

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	3	0	2	2	0	1	2	0	1	2	1
Lane Group	L	TR		L	TR		L	TR		L	T	R
Volume (vph)	418	714	152	52	1736	152	344	634	69	142	471	605
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Extension of Effective Green	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Arrival Type	3	3		3	3		3	3		3	3	3
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	45
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0		0	0		0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 13.2	G = 55.0	G =	G =	G = 13.4	G = 22.4	G =	G =
	Y = 4	Y = 4	Y =	Y =	Y = 4	Y = 4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 120.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	454	941		57	2052		374	764		154	512	609
Lane Group Capacity	386	2310		386	1638		202	665		202	675	596
v/c Ratio	1.18	0.41		0.15	1.25		1.85	1.15		0.76	0.76	1.02
Green Ratio	0.11	0.46		0.11	0.46		0.11	0.19		0.11	0.19	0.33
Uniform Delay d_1	53.4	21.6		48.3	32.5		53.3	48.8		51.8	46.2	40.2
Delay Factor k	0.50	0.50		0.50	0.50		0.50	0.50		0.50	0.50	0.50
Incremental Delay d_2	103.2	0.5		0.8	118.9		401.7	83.7		23.4	7.8	42.5
PF Factor	1.000	1.000		1.000	1.000		1.000	1.000		1.000	1.000	1.000
Control Delay	156.6	22.2		49.1	151.4		455.0	132.5		75.2	54.1	82.7
Lane Group LOS	F	C		D	F		F	F		E	D	F
Approach Delay	65.9			148.7			238.5			70.3		
Approach LOS	E			F			F			E		
Intersection Delay	129.5			Intersection LOS						F		

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SHORT REPORT

General Information		Site Information	
Analyst	HK	Intersection	Arrow Highway & Irwindale Ave.
Agency or Co.	Sasaki Transportation Services	Area Type	All other areas
Date Performed	8/7/2014	Jurisdiction	Irwindale
Time Period	PM Peak Hour	Analysis Year	Future W/ Project W/Mitigation

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	3	0	2	2	0	1	2	0	1	2	1
Lane Group	L	TR		L	TR		L	TR		L	T	R
Volume (vph)	523	1793	259	140	800	99	198	571	111	265	799	488
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Extension of Effective Green	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Arrival Type	3	3		3	3		3	3		3	3	3
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	37
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0		0	0		0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	EB Only	Thru & RT	04	Excl. Left	SB Only	Thru & RT	08
Timing	G = 6.0	G = 10.7	G = 28.5	G =	G = 11.8	G = 6.1	G = 22.9	G =
	Y = 4	Y = 4	Y = 4	Y =	Y = 4	Y = 4	Y = 4	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 110.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	568	2231		152	978		215	742		288	868	490
Lane Group Capacity	660	1994		191	922		194	735		359	1085	631
v/c Ratio	0.86	1.12		0.80	1.06		1.11	1.01		0.80	0.80	0.78
Green Ratio	0.19	0.39		0.05	0.26		0.11	0.21		0.20	0.30	0.39
Uniform Delay d_1	43.3	33.4		51.4	40.8		49.1	43.5		42.0	35.5	29.3
Delay Factor k	0.50	0.50		0.50	0.50		0.50	0.50		0.50	0.50	0.50
Incremental Delay d_2	13.8	60.9		28.1	47.1		96.6	35.6		17.1	6.2	9.1
PF Factor	1.000	1.000		1.000	1.000		1.000	1.000		1.000	1.000	1.000
Control Delay	57.1	94.3		79.5	87.9		145.7	79.1		59.1	41.7	38.4
Lane Group LOS	E	F		E	F		F	E		E	D	D
Approach Delay	86.8			86.7			94.1			43.7		
Approach LOS	F			F			F			D		
Intersection Delay	77.0			Intersection LOS						E		

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